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MARCH, 1878.

WHEN the Nurseryman propagates a tree or shrub by budding or grafting, or by a cutting, he simply makes a new

shrub or tree from a part of another tree, and this new tree, being a part of the parent tree, is like it in all respects; the same habit and constitution, the same bark, foliage, fruit and flowers. There are several methods of propagating trees and plants,—by Seeds, by Budding and Grafting, and by Cuttings. Budding and Grafting consists in taking a part of a tree, a small branch, or a bud, with a piece of the bark attached, and so connecting it with another tree that a union is formed. The stock or root upon which the part of the parent tree was worked, merely furnishes the nutriment from the soil which is thankfully received by the bud or graft, and which soon swells and grows, forming leaves and branches, and eventually a perfect tree, elaborating the sap which it receives from the original root into leaves and bark and wood, and fruit of its own kind. The Nurseryman may bud the Pear upon the Quince root, but the fruit produced is not only a pear but the particular variety which he budded. In ten thousand thus propagated no practical variation will be seen.

When plants or shrubs are increased by cuttings the matter is even more simple. The shoots of proper age are taken from the tree which it is designed to increase, placed in earth where, under favorable conditions of warmth

and moisture, they form roots, and eventually make perfect shrubs or plants. Of course the new plant must be like the old one in all respects.

There never has been, and never will be, the same certainty with plants grown from seed. No Nurseryman would plant seeds of the Crawford Peach or Bartlett Pear, and hope to obtain trees that would produce the same fruit. While it is true of species that "like produces like," it is not true of varieties. An Onion is planted for seed, and the seed produced is sure to grow Onions, but no seed-grower can know with absolute certainty that his Danvers Yellow will not be tainted with a variety of a different character. We grow a bed of Balsams, and the seed gathered from this bed will never produce Asters or Zinnias, but we are not absolutely certain our bed of white will not obtain a few stripes of red, or that in a bed of striped some will not lose their true character, and bear seed next season which will give selfs, or flowers of one color. The flower opens to the sun and breeze, the ovaries are in proper condition for fertilization by the pollen, when comes along some fragrant breeze from a distant bed or garden, bearing on its bosom the pollen of a different variety, and the mischief is done. Or, some industrious bee has made up his mind to spend a sunny hour among the Balsams, and the pollen of the last bed he visited is carelessly carried on his feet and clothes to other beds, fertilizing flowers on his own account all unknown to the gardener. This cross-fertilization changes the seed and not the flower, and is never known until the next season.

All our garden flowers were originally wild, and most of them have been highly improved. The glorious Pansy came from the little wild Violet, the Double Zinnia from a single, poor, weedy flower entirely unworthy of culture. In all flowers and vegetables of high character and culture there is a disposition to degenerate—to go back to the original. Much has been said about the "survival of the fittest," but the seed-grower finds to his sorrow that the poorest shows the most vitality, and the old taint, the wild character, perhaps somewhat akin to "original sin," will suddenly and unexpectedly re-appear when he had hoped good qualities were permanently established.

A good seed-grower must not only be a careful, observing, untiring man, but he must be thoroughly honest and self-sacrificing. He must resolve to do right, regardless of consequences. A poor, weedy flower or vegetable will produce abundance of seeds, while those of superior character give but little, and sometimes refuse to furnish a seed. The further a plant is removed from its natural state, the less seed, for in about every case its seed producing qualities have been sacrificed for the beauty of the flower. The *doubling* of a flower means the sacrifice, to a greater or less extent, of its seed-producing organs. We can get more seed from a dozen wild looking Petunia plants than from an acre of choice sorts, and with a thousandth part of the trouble. A single or semi-double Aster plant will give a handful of seed, while from the finest kinds a man may spend a day over a large bed in obtaining an ounce.

It is an old saying among fruit growers that "no one should thin his own fruit." Few have the courage to thin their fruit sufficiently. If this requires unusual decision, what must be required of the seedsman who is often compelled from conscientious motives to destroy a whole crop grown with care and at great expense, but which, upon reaching maturity, proves untrue, or about the purity of which he has serious doubts. Often the seed-grower finds that, through some "perversity of inanimate things" for which he is unable to account, a whole land of vegetables or flowers, upon which has been expended much money and labor, is seriously tainted with bad blood. He nerves himself to the work of destruction, orders up the teams and plows, and buries alike his hopes and the unsightly crop in one common grave. In other lands he observes "*rogues*," untrue plants, and these must be watched for and destroyed as fast as flowers appear, and before they have an opportunity to injure their neighbors, which they are almost sure to do if permitted to reach maturity so that the pollen escapes.

Eternal vigilance and self-sacrificing integrity is the price of pure seeds. We do not say that all seed-growers are equal to the work. The temptation to grow a large quantity of seed, regardless of quality, is too great to be resisted by all. Unfortunately, ignorant and dishonest seed-growers and cheap seeds abound, and receive encouragement from the people. At the same time, if you purchase a paper of seeds, say of a White Phlox, or any other white flower, and a portion should prove to have some color, or a good many of your striped Petunias should prove of one color, do not jump at the conclusion that your seedsman is a fraud, and designed to do a wrong thing. Perhaps he has been fighting this difficulty most courageously for many seasons, and had every reason to believe that he had conquered success.

METHODS OF PROPAGATION ILLUSTRATED.

After the above article was in type, and while reading the proof to correct any errors made by the printers, it occurred to us that with a few illustrations and some additional remarks, the different methods of propagation could be made so plain as to be understood readily by all. When instructing our artists in the preparation of the necessary drawings, we thought of Mr. BARRY'S *Fruit Book*, and have availed ourselves of the illustrations which that excellent work contains. The object of grafting, budding, &c., is to increase varieties that cannot be increased by seed with any certainty.

Different modes of *grafting* are practiced by

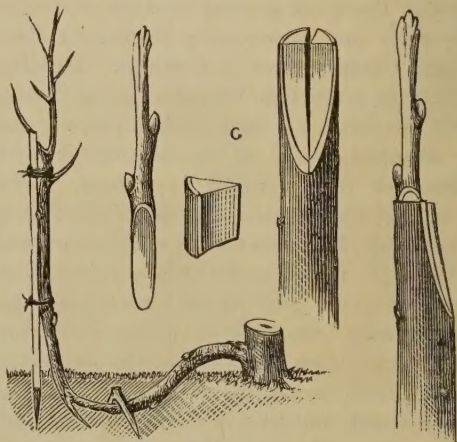


FIG 1. — PROPAGATION BY GRAFTING.
Cion; Stock split to receive the Cion or Graft: Cion in place.

nurserymen, but we have only space to show the more simple way in illustration of the facts presented in the first part of this article. The cion of which it is designed to make the tree is cut in the autumn or early winter, and preserved in earth until needed for use in the spring. It is made wedge-shaped, as shown

in letter G, and inserted in the slit made in the stock, and care must be exercised to have the bark of both cion and stock in close contact. The wound is then covered with a composition made of beeswax, resin and tallow, to protect from air and moisture.

The same object is accomplished by *Budding* as well as by *Cuttings*. Some kinds of trees

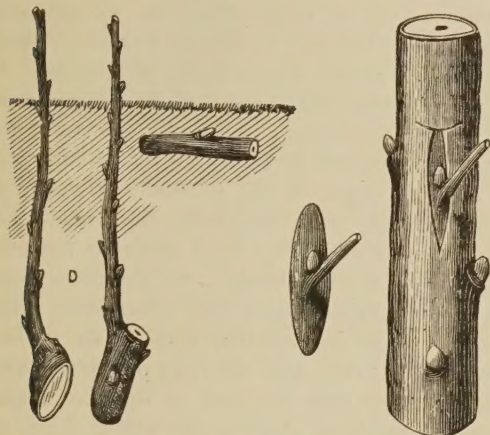


FIG. 2. — BUDS AND CUTTINGS.

are best increased by budding, while others are better grafted, and still others may be propagated rapidly by cuttings. *Budding* is simply separating a bud, with a portion of the bark attached, from one tree which it is desired to propagate, and inserting it under the bark of another. This is done about the middle of the summer, or as soon as the young buds, which are found at the axils of the leaves, have become fully developed. The engraving, fig. 2, shows the bud as cut from the tree, and inserted in the stock. It is then securely fastened by soft matting wound around the stock. The next spring, when the bud begins to grow, all the stock above it is cut away, and the tree formed from the growth of the little bud.

A *Cutting* is a shoot or branch mainly of one season's growth, but usually with a piece of the old wood attached, as in letter D. Some kinds of trees, and particularly the vines, will form roots, if the shoots are cut in autumn and planted at once, or preserved in sand or earth until spring. Grape vine cuttings made of a single eye, as shown in the upper part of the engraving, will usually make good plants.

Layering, as shown in fig. 1, is another mode of propagation, somewhat similar to propagation by cuttings, but the branch designed to form the new tree is only partially severed from the parent, from which it continues to draw sustenance until roots are formed sufficient for its support, when it is separated from the old stock. Grapes, Gooseberries and Currants are increased freely by this method, as also Carnations and many other plants.

It will be seen that the nurseryman, as before observed, makes his new tree from a part of another tree, and unless some mistake is made in labeling, or in consequence of some other error, every tree he sends out must be true to its name and character. It is far different with the seed-grower. He sows seeds, and watches and cares for the plants until the flowers open. They are composed of a green sheath or support, called the *calyx*; *petals*, which are known as the leaves of the flower, and which give its beauty; the *stamens* and *pistils*, as seen in letter A. The stamen is composed of two parts, the *stalk* C, on the extremity of which is the *anther*. This anther is furnished with a fine powder, called *pollen*, which, at the proper time, is propelled or scattered over the flower. B is the *pistil*, the female organ. It consists of the *ovary*, at its base, in which are the rudiments of seeds, the *stigma*, (the little rounded point at the top,) which receives the fertilizing powder from the *anther*, perfecting the seed in the ovary, and without this fertilization they shrivel like chaff, and are worthless. It will thus be observed that to obtain seeds that will germinate, the pistil must receive this fertilizing pollen, and unless fertilized from pollen of the same flower, or one of similar color and character in every respect, the seed will be untrue.

Our readers, after an understanding of the facts presented, will be able to appreciate some of the difficulties which the seed-grower meets at every step, and to bear with patience any little disappointments which, in the nature of things are, and always must be, unavoidable. Those seed-growers, however, who unite experience and skill with untiring watchfulness and unswerving integrity will always produce the best seeds, and those which, in the main, will give satisfactory results. To the question asked us more than once during the past month, how

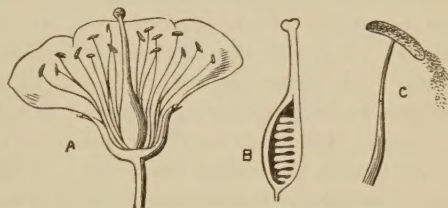


FIG. 3. — FLOWER AND ITS SEED.

the purchaser of trees and seeds can know that he obtains what he purchases, without wasting a whole season, and in case of trees several years for trial, we can only answer, buy your trees and seeds of men of character and reputation. The reputation of both seedsmen and nurserymen is their capital, and they cannot afford to injure it by selling inferior or worthless articles.

THE GLADIOLUS.

THE GLADIOLUS is one of the most beautiful, most easily cultivated, and altogether the most satisfactory of our Summer-flowering Bulbs. The flowers are borne on spikes two feet or



more in height, often several spikes from the same bulb, or rather, after the leading spike of flowers begins to fade, several side-shoots are produced from the original stem, as shown in one of our engravings. These spikes, in all good varieties, are well-furnished with flowers, for eighteen inches or more in length, of almost every desirable color—brilliant scarlet, crimson, creamy-white, striped, and blotched and striped in the most curious and interesting manner. Perhaps no other flower presents so gorgeous a display of brilliant colors in the garden and on the exhibition tables, or at extensive floral decorations, as the Gladiolus. It is also the most enduring flower we have. A spike cut when a few of the lower flowers have opened, and placed in water in the house, will keep in fine condition for at least two weeks, improving every day. After a few days, when the lower flowers begin to fade, they should be removed, and the stem shortened.

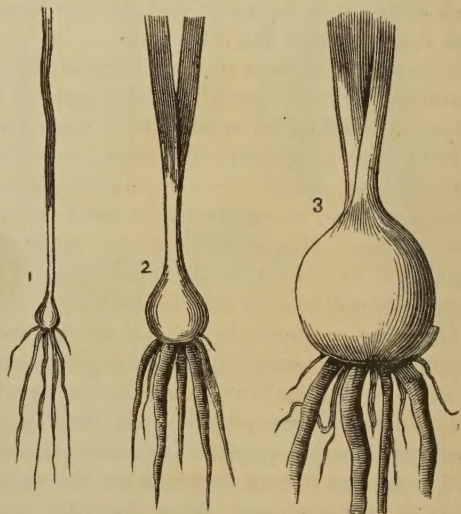
The Gladiolus will flourish in any good rich garden soil. In Europe fresh manure is thought to be injurious, but we have never found any difficulty on that account in this country, though preferring to plant in soil that has been well enriched the previous year.

For many years the French have been the most successful propagators of this flower, and every season introduce new and beautiful

varieties, grown, of course, from seed, which the rest of the world have been glad to purchase at extravagant prices,—five dollars or more each; but these prices are reduced from year to year. There is no country in the world, we think, where the Gladiolus thrives as it does in America—it is subject here to no disease, which is not the case in Europe—and to plant a bulb is to insure a good spike of flowers. It is not strange, therefore, that the Gladiolus is becoming exceedingly popular, and receiving especial attention from both amateurs and florists.

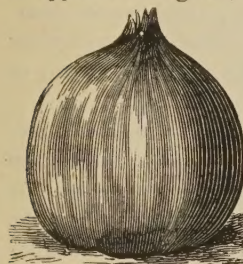
The root-stock of the Gladiolus is really a *corm* or *solid bulb*, and from this comes the erect stem, terminating in a spike of flowers. The culture is very simple. Set the bulbs from six to nine inches apart and cover about four inches. If set in rows they may be six inches apart in the rows, and the rows one foot apart. The planting may be done at different times from the middle of April to the first of June, to secure a long succession of bloom. Keep the earth mellow, and place a neat stake to support the spikes in storms. The usual and really best way to obtain Gladioli is to purchase corms or bulbs of the florists, and good sorts can be obtained at from \$2.00 to \$5.00 a dozen, while unnamed sorts can be had, and of excellent quality, at from 75 cents to \$1.50 a dozen, and somewhat less by the hundred. Many of these are seedlings of merit. A California gold mine is not needed to obtain a fair lot of Gladioli.

The Gladiolus may be grown from seed, but this work requires some care and patience. Sow the seed in May, in a frame, or bed surrounded with boards like a hot-bed frame. As



the weather becomes warm, provide partial shade by covering the bed with narrow boards, leaving spaces between for ventilation: water

as often as the soil becomes dry. About the middle of summer the young plants will begin to appear, like grass, and will continue to show



themselves all through the summer. In the autumn, before severe frost, take up the little bulbs, which will be smaller than peas, of the size and appearance of figures 1 and 2.

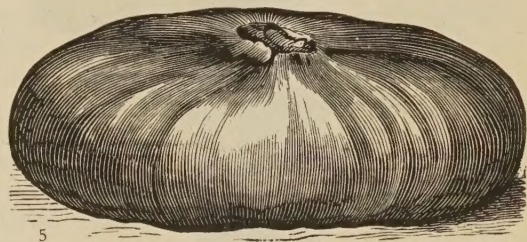
Dry them well, and store away in some cool room, but secure from frost, until the next spring. Then sow these little bulbs in the garden, in drills, like peas, and at the end of the second summer, when taken up, they will be about the size and appearance of figures 3 and 4, and will all be in good condition for flowering the third summer. Of course they must be dried when taken up, and cared for the second winter like the first. The third spring plant them in beds where they are to flower, say six inches apart in the rows. A few may flower the second summer.

The commoner varieties of Gladioli increase somewhat rapidly, but the finer sorts seldom form more than one or two bulbs. In form, the bulbs differ exceedingly, some varieties making a large flat bulb, like figure 5, while

other sorts are always small and somewhat conical, or egg-shaped, like figure 4. The largest bulb is not always the best.

To those unacquainted with the Gladiolus we desire to open a new field of beauty, and have therefore presented our readers this month with a colored plate of this flower, and not by any means of the choicest and most expensive sorts, but of a few good kinds that are quite within the reach of the people, as they can be purchased for \$2.00 a dozen.

In the fall, take up the bulbs, and after cutting off the tops, let them dry in the air for a few days, and store out of the way of frost, for next season's planting. Look at them occasion-



ally. If kept in a place too moist they will show signs of moisture and perhaps mildew. If this appear, remove them to a dryer position. If the bulbs shrivel, it shows they are getting too dry; but they do not usually suffer from a dry atmosphere.

LAWNS AND LAWN TREES.

IN SELECTING trees for planting on a lawn care must be taken to choose such as are suitable in *all respects*. A tree may be very beautiful, and yet so large as to be entirely out



PURPLE-LEAVED BEECH.

of place on a small lawn, while another may be of the proper size and have no claim, on account of good looks, to a position on a small

place, as we have so many elegant trees from which to make choice. The lawn is the garden-parlor, and must be furnished with handsome trees; and there is no excuse for planting those of inferior character. A good and proper tree may be obtained as cheaply as one that is entirely unsuited to the place.

Some trees, when in flower, are quite beautiful, but at other times have nothing to recommend them; others attract attention in the early spring, when the leaves first appear, but soon lose their beauty. For the lawn trees are required that appear to advantage all through the summer.

Lawn trees should have a rich soil, so as to be able to obtain all the nutriment they need, and room for their full development. Trees should not be so near together that their limbs will touch, or come very close. Each tree should be an object of beauty, with a fine border of lawn around, so that the view will be a pleasant one from every side. The pruning knife must never be allowed to come near an ornamental tree. It is well to prune our vines and trees for fruit, but no man should have the

presumption to attempt to improve the glorious forms which the Creator has given the forest trees. How sad has been the work of the pruning knife and saw! We scarcely see a lawn but shows its murderous work — the Nor-



AMERICAN ELM.

way Spruce pruned up six or eight feet from the ground, when nature designed its grand arms to sweep the earth; Horse-Chestnuts and Mountain Ash, mere effigies, crying for some friendly hand to finish the work, and end their ruined lives.

It is not surprising that all who make new places are anxious to obtain shade and beauty as soon as possible. There is a rawness about newly-made grounds that is certainly unpleasant. Everybody, therefore, almost, strives to obtain trees as large as possible, but this is not always wise. Trees of large size do not bear transplanting as well as those that are smaller, and frequently die, or receive such a check that the smaller tree soon becomes the largest. Our advice would be to obtain trees only of fair size and give them the best of care. A thick mulching to shade the roots, or frequent stirring of the soil on the surface, with good soakings of water two or three times a week during the driest weather of summer, will soon make a small tree large, vigorous and handsome. Trees of very large size, fully grown almost, are moved with safety, but this is an expensive operation, requiring a good deal of machinery and experienced operators. We once saw a tree, perhaps forty feet in height, on exhibition at one of the English fairs, that had been removed from its native forest. We observed

by the papers afterwards, that it had been transplanted to a gentleman's grounds, and not only lived, but scarcely showed any evidence of the removal, or the long, troublesome journey it had undergone. Some time we will show how this is done. We will now speak only of a few good trees.

The *Purple Beech* is of small size, and therefore suited to lawns of small size. Large trees will not transplant very well, and our readers will not do well to seek them. When the young leaves first appear they are of a peculiar brilliant reddish color. As they become older they change to a dark purple, and are always a conspicuous object on the lawn. Later in the season, though not until quite autumn, the peculiar purple color is nearly lost. The form of the tree, as will be seen by the engraving, is good; in fact it is quite a pretty tree even when destitute of leaves.

The *American Elm* is, perhaps, without exception the very best avenue tree we possess. It is graceful in form, drooping, and its branches are carried well up, so that it causes no obstruction to travel or observation. For large lawns it is equally desirable, and we, like every lover of beautiful trees, have often stopped in admiration before this native, which is alike elegant on the lawn, the avenue, the country roadside, or in the old pasture lot. Our artist obtained his drawing from a young, vigorous tree that did not show very plainly its drooping character.

The *Sugar Maple* is well-known to all our readers, and though not suitable for small lawns, is and always will be a favorite with all



SUGAR MAPLE.

lovers of sylvan beauty. In the autumn, when the leaves put on their brightest colors, the Maple is the pride of the forest. Our artist was so pleased with a favorite tree some miles



CUT-LEAVED WEEPING BIRCH.

from Rochester, that he secured a portrait, which we present our readers.

DROOPING TREES we do not admire. An occasional specimen, as a curiosity, is well, but a lawn abounding in Weeping Trees would be a sorry place. Weeping Trees in which the main branches are erect, the slender branches or spray only drooping, as in the Cut-Leaved Birch and Weeping Willow, are models of elegant grace. Those in which the strong, main branches trail tortuously to the ground,



WEEPING BEECH.

like wriggling serpents, as in the Weeping Mountain Ash and others of similar character,

have something unnatural and monstrous in their appearance far from pleasant.

The *Cut-Leaved Weeping Birch* is the most beautiful of all the drooping trees, and not excelled in grace by any tree of any kind with which we are acquainted. It is almost as attractive in winter as in the summer, and at all seasons is a most conspicuous object on the lawn. The tree is of good size, twenty feet or more in height, of rapid growth, and perfectly hardy. In summer, the slender spray, as fine almost as needles, and yards in length, adorned with fairy-like leaves, and moved by the slightest breeze, appear as if floating in the air. In winter the silvery trunk and branches, draped by graceful, drooping sprays, like silver threads glistening in the sunlight, create a scene of almost fairy-like beauty.

The *Weeping Beech* is one of those odd trees which we do not admire, and yet one with which many people doubtless will be interested. Its strong branches twist and turn outwards and downwards in a very peculiar manner, and only when covered with foliage so as to hide its ungainly branches is it tolerable. A large tree, of course, would be attractive, on account of its singularity. We have tried to show its character in the engraving, which was taken from a specimen grown in this city.

LEGEND OF THE FORGET-ME-NOT.



WHEN flowers first bedecked the earth,
In Eden's happy bowers,
The LORD, 'tis said, in cool of day,
Came down among the flowers.

To each He gave its fitting name—
To each a loving word,
And blessed the garden He had made,
Beholding it was good.

Again, He came, in cool of day,
And walked among the flowers;
But one He saw, a blossom fair,
Was sad in Eden's bower.

The loving LORD bent tenderly,
And raised its drooping head,
When, "LORD, my name I have forgot,"
The blue-eyed blossom said.

No bitter word the Master gave,
"Forget me not," said He,
And, smiling on the sad, sweet flower,
"Lo, this thy name shall be."

Unionville, O.

MARY EARLE HARDY.



OPINIONS OF VEGETABLES.

Assuming that your readers are considerably interested in the products of the garden, an account of my experiments with the varieties of vegetables is furnished them. My self-raised collection of garden and farm seeds now contains two hundred and twenty-five varieties and more, which has been made solely for private satisfaction and experiments in central New Hampshire, from the product of a loamy soil tending more to gravel than clay, consequently my results will vary somewhat from those obtained from lower latitudes and heavier soils.

Beet. The Egyptian and Bassano for first crop, with preference for the first named. The Blood Turnip for fall, and the Long Blood and Henderson's Pineapple for winter use, are my selections. Dewing's and other Turnip varieties, I find not equal to those named before them.

Cabbage. Early York and Early Wakefield I have found to be the best early kinds, the Winningstadt for later purposes, as it is sure to head and of good quality.

Carrot. After having tested the Early Scarlet (Horn,) Short Horn, Long Scarlet Stump Rooted, James' and the Intermediate, Altringham, the two Belgian Green Tops and Improved Long Orange, the second has been selected for forcing, the first for the second early and the last for general cultivation.

Corn, Sweet. Early Minnesota is my selection for the first boil, it being second only to the Early Boynton in earliness, but sweeter and the easiest to free from the silk. Moore's Concord is an early and large variety, and well adapted to follow the Minnesota and precede Evergreen Sweet. With one year's trial I conclude this last to be the best very late kind in the list. Stowell's Evergreen has heretofore been my choice; the Evergreen Sweet does not produce so much fodder, but larger ears.

Cucumber. The Early Russian takes precedence in maturing, the Early Cluster follows, and then the Early Frame. Perfection Pickling, Early Cluster and Long Green are the best for Pickling, and rank in the order named.

Kohl Rabi has not proved of value for the table or for stock.

Onion. The Danvers Yellow has proved certain of making a crop, and of milder or better flavor than the Yellow, Red, Silverskin or White Globe; therefore, I grow it.

Potatoes. The Alpha is the earliest, but soon loses its good quality and is not prolific. Snowflake is second early, handsome, unexcelled as a table variety, and moderately prolific. Brownell's Superior of good size, shape, habit and quality. If it sustains its present good name it will long be known. Centennial has not won many words of praise from me during two years' cultivation of it. The Eureka (Brownell) is one of my highly prized varieties. Brownell's Beauty is losing favor. Early Vermont is given up. Comton's Surprise is a favorite. My opinion of Brezee's Prolific is not good, but it differs from others near by. Thorburn's Late Rose is a reliance. Peerless, gone by. Peachblow, not popular. I have cultivated many other varieties, among which are several unintroducted seedlings.

Salsify, or Oyster Plant is a very good substitute for oysters.

Squashes. I have tried more varieties than there are new moons in the year, and have discarded all but the American Turban and Hubbard. The first for fall and the latter for winter. The Scollops and Crooknecks are not worth, to me, the interest on the value of the soil they grow in. The Vegetable Marrow and Patterson's Yellow are not even peers of them, and the Marblehead and Butman have fallen so far below my desideratum for a Squash that their further cultivation has been abandoned with that of the Boston Marrow.

Turnip. The Stone varieties have proved the best with me, and particularly the White Winter. It remains hard, sweet and free from strings until May. Robertson's Golden Ball is one of the best yellow fleshed varieties, and superior to Purple Top Yellow Aberdeen. The Purple Top Strap Leaved is an early kind, of pretty good quality.—G. R. DRAKE, Pittsfield, N. H.

LILIES IN POTS.

Seeing, in different journals, accounts of failures with Lily bulbs, I will give you my experience in raising Lilies. At first, like many others, it was nearly all failures. Some eighteen years since I commenced with Japan Lilies, and planted them in the garden — got a partial bloom the first season, and the next season they were gone. Moles, or ground mice, would eat them, or else they would rot. About three years later it occurred to me to try planting in pots; I made a compost of leaf mould one part, decayed sods one part, leached cow droppings from the pasture one part, all very finely pulverized and passed through a sieve and mixed thoroughly. I used ten inch pots, putting one and one-half inches of drainage, (charcoal does best for me,) filled in a little over one-third compost and about one inch of sand for bulb to rest on, filled compost around the bulb to its top, then one inch of sand, and over all the compost to within one inch of the top of the pot. The pot is not entirely filled in order that it may hold plenty of water, which the bulbs require when blooming, and this is especially the case with California Lilies. It is best to procure bulbs in the fall. After the potting has been done as described above, set the pots on a cellar floor, not too dry or warm, and let them remain until spring, or until shoots appear, when they should be removed to the light, and in the course of a week into a position to have the sun. In this situation they should remain, watering as required until they begin to show buds, when they should be at once removed to a shaded position where they will have plenty of air, but no sunshine except every morning or evening. Never allow them to have the full noon-day sun. By this method of treatment you will have any quantity of Lilies, healthy, and lasting long in bloom. I keep mine on the porch where they get plenty of air, but without the direct rays of the sun until five o'clock in the afternoon. After blooming again set them out in the sun and let them remain until the stocks ripen or the frost kills the top, then put them in the cellar, and when the tops are perfectly dry shake out the surface soil till you get below the annual roots, and with a pair of sharp scissors cut off the stock clear above the bulb. Now fill up the pot again with good compost and put it back into the cellar until the following spring, and the annual roots and the small bulbs attached can be planted in a box, covering the small bulbs about two inches deep. The small bulbs can be planted close in a box on the cellar floor, and in the spring dig a hole in the garden where there will be a shade from the hot sun, so as to fit the box; leave them until

fall and then take up and pot off your bulbs, and in this way raise your own Lilies. Never disturb permanent roots at the bottom of the bulb; mine have improved so that where I had one I have now three, four or six stalks, and I never fail having Auratum and other Japan Lilies. *Lilium lancifolium album* for me is the great favorite, although I raise Auratums from nine to thirteen inches across, and from six to fifteen on a stock—AMATEUR, — Delaware.

THE CHINESE PRIMROSE.

I know of no plant so entirely satisfactory to most amateur florists, ladies especially, as the beautiful Chinese Primrose, *Primula Sinensis*, in all its varieties of form and color, from the pretty, single varieties, so like wild-wood blossoms, to the charming double kinds, which resemble miniature roses. A windowful of neat pots of the five or six inch size, neatly arranged with four slender stakes in each, and a little hoop of narrow wood holding the foliage well in place, is, when the plants are in fine bloom, a sight worth looking upon. As I have had unusual success with these plants, it may be I can give a few hints that will aid some one unacquainted their culture, to secure for themselves this "thing of beauty."

The single varieties are best raised from seed sown from February until June, for succession. Plants desired for Christmas, sow in February; for February, in March; for March and April, the first and last of May, in our dry climate. The soil proper for the seed is composed of old leaf mold one part, two parts of light, fibrous loam, and fine sand sufficient to make it light and porous. Take five inch pots, fill one-third with broken crocks, then nearly to the top with the compost, water through a fine rose or atomizer, then sprinkle a very little fine sand over the surface, sow the seed carefully and then barely cover with finest sand sifted over through Swiss muslin. Cover with a pane of glass, and place as near the light as possible, in a shaded part of the conservatory or the east window of a warm room. In two or three weeks a fine crop is the result. As soon as the plants show their fourth leaves, or are large enough to handle, transplant them singly into small thumb pots, using drainage and the same soil as before, and place in a cold-frame or continue in the window for about two weeks, giving air indirectly each day, and gradually hardening to prevent the young plants from becoming drawn and spindling. As soon as well established, repot into five or six inch pots in which to bloom, using the same compost, but adding a third part of old thoroughly rotted cow or hen manure, the older

the better. At this stage, I stand my pots in an old, spent hot-bed, as the great secret of success, I find, is to keep the plants in healthful, growing condition from the time the seed germinates until they bloom, not allowing them to grow pot-bound, or their vigor to be checked in any way, as this will so injure the plants that you will have a most unsatisfactory bloom. Continue this course until about the second week in September, when they should be placed in some place where they will be entirely free from draughts of air. Keep the soil moist, but never either dry nor too wet, invariably watering with water as warm as the temperature of the room. As soon as the flower spikes begin to form down in the heart of the plant, commence using weak manure water, with a little soot added, twice a week.

I like best to raise single varieties each season from seed, but if an unusually striking variety appears, it is best to continue it by means of cuttings, as with the double varieties. There are numbers of off-shoots from the main stem of the *Primula*, which can be taken as cuttings from the old plant.

After blooming, the plants require a season of rest, about six weeks or less, after which we grow them right on freely, when they will produce abundance of shoots for cuttings; these I take off any time during the early summer, and filling small pots with drainage, a little compost and sand, the end of the cutting is embedded in the latter, the pot watered and then placed in a hot-bed, with good bottom heat, or, in lieu of this, in a warm spot. In one month the plants will become well rooted, when each one should be transferred to a four inch pot, and kept growing continually; examine every week or two, and just as soon as they fill with roots transfer to a larger one, never allowing them to become pot bound.

Thus, I never fail to have fine plants, though when I desire an unusually fine specimen for exhibition, instead of cutting the old plant I report it in a six inch pot, and from this into a seven, and so on until a ten inch pot, will show a plant worth exhibiting. The temperature *Primulas* best enjoy is one ranging from 40° to 45° in night, to 50° to 60° by day, and if sun heat 65°.

Having been unusually successful with this method, I "give in my experience," but if others know of any other method it will be pleasant to compare notes. — AUNT CARRIE, *Morrison, Mo.*

A WEEPING WELLINGTONIA GIGANTEA, as the English insist on calling our big California tree, is advertised in that country.

OUR FLOWERS.

I want to tell you about some of my lovely flowers that I grew last year. The *Dahlias* were perfectly beautiful. In some instances two or three shoots would come from one tuber, and I took off some of the extra shoots and planted them, and they made very large plants and bore hundreds of flowers. I did not know when I planted them that they were ever treated in that way, but have since found out that it is a very common practice. I had two white ones, and the first bloom on one of them was a shaded lilac, the next and all the rest were pure white, and such lovely blossoms. "The Pet" is a beauty: on one bush there were some that were almost white, some entirely crimson, and others with a few spots: indeed there was so much variation that we could hardly find two alike. I would like to ask you a question about that shaded-lilac *Dahlia*. It was planted next to a purple one, "The Queen's Messenger." Do you think it hybridized; or what was the reason the first bloom was lilac and all the rest white, and is it a common thing? The *Portulaca* is very beautiful—in fact, almost dazzling. Some days it remains in bloom all day, and we have all the colors and shades of color—spotted, striped; and some of the blossoms are three inches across. The *Gladiolus* is a very beautiful flower. Our boys call the *Pansies* "baby faces," and are delighted with the flowers.—MRS. E. C. A., *Chetopah, Kansas.*

The fancy *Dahlias*, that is those that are spotted or shaded, are apt to sport, and give some flowers that are as dark as the darkest markings on the true flowers; and others, with only the light color of the flower, without any dark markings. The proximity to other varieties does not affect the flowers, but would the seed.

BULBS FROM SEED.—From two packets of *Dahlia* seed, planted February 14th, I grew thirty-nine plants, only three of which were single, and of all colors but white. I set them in the ground the last of May, and they began to bloom the last week in June, and never stopped until killed by the frost in November. When taken up the tubers filled a half barrel. Two packets of *Gladiolus* seed planted 14th of February, and in two weeks had seventy-four plants or bulbs. Set them in the ground same time as the *Dahlias*; never lost one. When taken up in the fall I found them all sizes, from a good sized pea to a walnut. One packet of *Abutilon* seed produced seven plants, all in bud or blooming at time of writing, February 6. Planted the three varieties of seed in old tin cake pans, sifting the soil. I wet flannels and covered the pans, set them behind the stove and on the mantle shelf in the kitchen. — MARY S. MATHIS, *New Haven, Conn.*

THE YUCCAS.

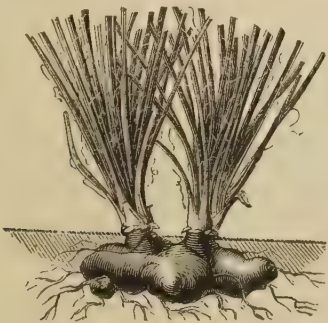
The Yuccas are an interesting class of plants, particularly so to people in a northern climate, where flowers and even foliage of this character is so scarce. They give to the garden something of an oriental or tropical appearance that is exceedingly pleasant. There are several



varieties, but *Y. filamentosa* is the hardiest, and we think will endure almost any of our Northern winters. It is called *Adam's Needle*, because the leaves are sharply pointed and throw off from their edges numerous fine threads. It sends up a strong flower-stem in the middle of the summer, bearing a large spike of whitish flowers. The Yucca is an evergreen perennial and delights in a rich soil. We usually throw over the plants a few

evergreen boughs or something of the kind, as a slight winter protection. We call attention to this old plant with a good deal of confidence, feeling assured that it will more than meet the expectations of our readers. Our engravings show the plant in flower, and the tuberous root; in fact, the plant in the condition it is when obtained and planted in the spring.

There are other varieties of Yucca worthy of culture, but none so hardy and desirable for a northern climate as *filamentosa*, which we have



figured. *Y. gloriosum superbum* we have grown pretty well, and, of course, further south this and the more tender varieties succeed. It is at the North, however, where plants with an

oriental or tropical appearance are so scarce and delightful that the Yucca is most prized and most needed.

At the request of a lover of these beautiful plants, and indeed of everything beautiful, we publish the following, by MARGARET FULLER:

THE YUCCA BY MOONLIGHT.

I had kept these plants of the Yucca *filamentosa* six or seven years, though they had never bloomed. Last June I found in bud the one which had the most favorable exposure. A week or two after, another, which was more in the shade, put out flower buds, and I thought I should be able to watch them, one after the other; but no! the one which was most favored waited for the other, and both flowered together at the full of the moon. This flower is made for the moon, as the *Heliotrope* is for the sun, and refuses other influences or to display her beauty in any other light.

The first night I saw it in flower I was conscious of a peculiar delight, I may even say rapture. Many white flowers are far more beautiful by day. The Lily, for instance, with



its firm, thick leaf, needs the broadest light to manifest its purity. But these transparent leaves of greenish-white, which look dull in the day, are melted by the moon to glistening silver. And not only does the plant not appear in its destined hue by day, but the flower, though as bell-shaped, it cannot quite close again after having once expanded, yet presses its petals together as closely as it can, hangs down its little blossoms, and its tall stalk seems at noon to have reared itself only to betray a shabby insignificance. Thus, too, with the leaves, which have burst asunder suddenly, like the Fan-palm, to make way for the stalk. Their edges, in the day-time, look ragged and unfinished, as if nature had left them in a hurry for some more pleasing task. On the day after the evening when I had thought it so beautiful, I

could not conceive how I had made such a mistake. But the second evening I went out into the garden again. In clearest moonlight stood my flower, more beautiful than ever. The stalk pierced the air like a spear, all the little bells had erected themselves around it in most graceful array, with petals more transparent than silver, and of softer light than the diamond. Their edges were clearly, but not sharply defined. They seemed to have been made by the moon's rays. The leaves, which had looked ragged by day, now seemed fringed by most delicate gossamer, and the plant might claim with pride its distinctive epithet of *filamentosa*. The thought which filled my mind was that here we saw the type of pure feminine beauty in the moon's own flower. I have since had further opportunity of watching the Yucca, and verified these observations,—that she will not flower till the full moon, and chooses to hide her beauty from the eye of day.

FLOWERS.

They are old as that primeval garden that GOD planted for our first parents, and yet are new to-day as if just from the Maker's hand, as fresh and bright as when they first opened their eyes upon the halcyon skies of Paradise. The ages have taken nothing from their loveliness, and constant association cannot make them poor or common. They are fairer than anything else upon earth, and, though frail as beautiful, we value the perishable things more than gems. Like the grand old trees, with their brooding presence and many voices of leaf and bough, they seem almost like sentient things, they are so bright, so sweet, so full of grace and beauty, so linked by association with humanity. A solace and delight from childhood to old age, they add to the joy of our glad moods, and smooth away many a pain and corroding care, as if an angel's touch reached us from their velvet leaves. Waifs of Paradise, indeed, are they, scattered over hill and plain, wearing in their tender forms much of the divine birth-place. Its wondrous peace and blessedness are felt in their pure and holy influences, something of its radiant glory shines in their marvellous tints, and deep down in their dewy cups, where humming bird and bee delights to revel, we can scent its imprisoned airs of balm. The flowers are no respectors of persons; their bloom is no sweeter in the grounds of the millionaire than in the poor man's humble garden, and they reward the beggar boy's tender care as lovingly as if he dwelt in marble halls. We find them everywhere, not only in garden and greenhouse where sumptuous Southern plants vie with the hardier growths of the North, but on the mountain side,

in forest and valley, on sunny slope and by running brook. Orchard and clover field are glorious with their wealth of color and perfume. The meadows are filled with buttercups, the violet peeps by the woodland path, the dear old dandelion studs the grass along the highway,

"Fringing the dusty road with harmless gold;"

LOWELL has made it classical. In shady grove we have the shooting star, drooping in its rare delicacy and grace, bearing all the fragrance of the wild wood hidden in its waxen petals.

How beautiful is the ministry of the flowers! They bring to the sick room the health of field and garden, and to the humblest apartment lend an air of grace lovelier in effect than costly furniture or rare old paintings. They beautify the church and the festive hall. The bride wears them to the marriage altar, and we place them reverently and tenderly in the pale hands and on the breasts of the dead. They whisper an almost human sympathy from the coffin and the grave. They are GOD's humble ministers sent from His loving heart to cheer His weary children, toiling along the dusty ways of life, bringing to their burdened souls something of refreshment and joy, lifting them to that land of eternal bliss and beauty of whose loveliness they are but imperfect types.—PERIWINKLE, *Madison, Wisconsin*.

THE WATER LILY.

I instituted a new plan for the growing of Water Lilies, last season, and thought it well to give you the result of my experience. I had a round hole dug in the ground two and one half feet deep by three in diameter, and fitted a row of brick around the edge, imbedded in the ground, and cemented the whole with two coats of cement, making it water tight. In this I put ten inches of strong soil, and planted four roots of *Nymphaea odorata*. The plants grew better, and produced more and larger flowers than they did in tubs. For an edging for this pond I placed a wire bracket about six inches below the water line, and set five inch pots around on the bracket, making a complete edge. These I filled with grasses and water plants (wild) gathered from ponds and branches. Everything grew splendidly, and the scene was truly natural. I intend to add the *Nelumbium luteum* to this pond the coming season. The water does not need changing during the season, only replenishing to keep full. Sometime during the night a friend added a large bull frog to this display. After the animal got used to the situation, he gave us some melodies of his own selection. Bull frogs can be domesticated and trained to sing as well as Mocking Birds, but not so sweetly.—E. E. M., *Nashville, Tenn.*

WHAT WAS DONE IN MISSOURI.

MR. JAMES VICK :—Nothing gives me greater pleasure than the culture of flowers. I have a beautiful home in Salina County, considered the garden spot of the State; but what was this home when we came here two years ago? rich in soil, it is true, but a perfect wilderness of locust and rank weeds, only one flower was to be found, and that a bunch of white Pæonies, that "would not bloom," the neighbors said. But my husband, as well as myself, was fond of flowers, so, with his assistance, we made borders three feet wide and seventy yards long, which were well spaded and manured. My Pæony bunch was divided into eight parts and replanted; I procured of my neighbors some snow-balls, roses and lilacs. In my researches I became acquainted with a lady who had your books, and I sent for them, and not one year has passed without them.

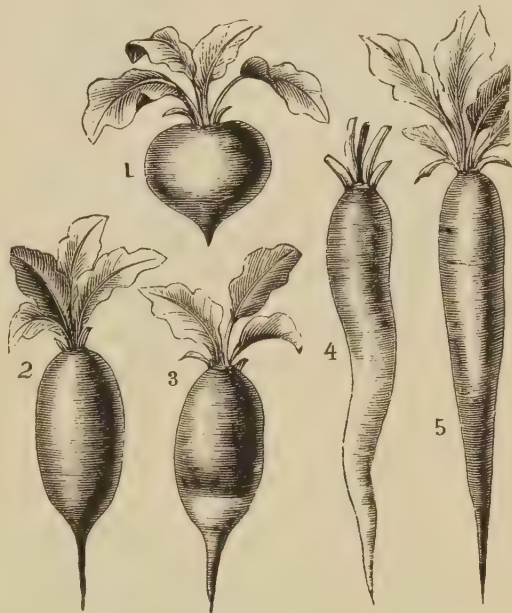
Now I have some fifteen varieties of roses, and my two long borders are a feast to the eye from June until frost. My Snow-ball is ten feet high, and a perfect beauty, my Pæonies have never failed to bloom; my beds, between my borders were filled with the finest Hyacinths, Tulips, Daffodils, Salvias, mammoth Larkspurs, Balsams, Phlox, Bridal Wreath, double Spiræas, sweet-scented Syringas, hardy Hydrangeas, Giant of Battles, Moss Roses, Madam Charles Wood, Duke of Wellington, Madam Elliot, dwarf white roses, Yucca filamentosa, Nemophila, Eschscholtzia, white Rose Moss, Verbenas, Gladiolus, Tuberoses, double Petunias, Carnations, Dianthus, Cannas, Geraniums, Lemon Verbenas and many other kinds. But I must not forget my summer house; it has only been up two years, and I have a Queen of the Prairie that has run its six feet. Besides this there is a Japan Honeysuckle, and then I plant such summer climbers as the Madeira Vine, Nasturtiums, which gracefully entwine it. I feel proud of our flowers. I give you the praise. I had one hundred plants of Pansies from one paper.—ANN E. WITHERS, *Fairville, Mo.*

A TABLE BEAN.—Almost everybody is fond of "String Beans," and few garden vegetables can be grown so easily. I never fail of a crop, and a hill of Beans, when vigorous and healthy, is no mean object, whether in flower or pod. I do think the purple flowers handsome, and no less so the long, slender pods, suspended from the stems in large golden clusters. I say *golden*, because I wish to advise everybody to plant the Black Wax Bean—it is so good and so handsome. Don't plant Beans too early. They will not bear much cold and no frost.—YOUNG GARDENER, *Chemung Co., N. Y.*

RADISHES.

Will you please speak a good word for the *Radishes*. I had always thought Radishes tough, indigestible things, quite unfit for human food, until two years ago, and had good reason to think so. At that time, circumstances being favorable,—a little garden patch, and a wife who said, do sow some Radishes, a most unreasonable thing, I then thought,—I did sow some seed, without the least suspicion that they would ever grow, or, if they did, that the product would be worth the gathering. How wonderfully I was disappointed. That Radish seed grew, and made nice, pink, oval-shaped roots, of a beautiful pink color on the top and white on the bottom, tender and crisp, cool and refreshing. I had Radishes for breakfast for about three weeks, and for tea, too, and made up my mind that I would live on Radishes the balance of my natural life. Do tell the people about that tender oval Radish, and how to grow them, if there is any secret about the matter, or any skill required. Was it the kind, or good luck, that caused my Radishes to be so good, when all I had ever seen were so bad as to prejudice me against them.—B. S.

Nothing is better than a good, tender Radish for breakfast, with a little *fresh* butter, just made, with the flavor of the fresh June grass. Radishes must be grown quick or they are tough and indigestible. Sow seed in a warm, sheltered border, and if a little fresh soil can be had from the prairies or woods, as a top-dressing for the



bed, all the better. We give engravings of the two kinds, the *oval* varieties alluded to by our correspondent, the *Rose Olive-Shaped* and *Scarlet Olive-Shaped*, with *White-Tip*, or *New Breakfast*, figures 2 and 3. Fig. 1 is the Red Turnip, an old sort, and a good standard kind for market, but less delicate and tender than the oval varieties. Fig. 5 is Long Scarlet, the best of the long varieties, and fig. 4, Long White Naples, a white Radish with green top, the very best for growing late in the season.

FLOWERS IN SOUTH CAROLINA.

The State of South Carolina, extending from the 32d to the 35th deg. of latitude (nearly,) enjoys a considerable diversity of climate and an extensive variety of flower-growth. The north-western part of the State is mountainous, the eastern flat, the central portions hilly, and the southern gently "rolling." From Columbia to the northern part of the State is called the "up-country;" all below, the "low-country;" and natives to the manor born profess to be able to distinguish a citizen's location in either from his accent. There are certainly some points of difference. The ancient aristocracy of the State resided for the most part in the "low-country," and their luxurious mode of life gave *prestige* to that section. This "low-country" is a very Paradise of flowers. In Charleston every home has its garden plat, and each stately mansion its large enclosure of choice plants and conservatory of exotics. Though the tall houses may present only narrow gable-ends to the street, and shut their surroundings from the passer-by with high walls and close shutters, yet once gain entrance, and oh! what a feast to the senses, in the wide beds of great, sweet purple Violets; in the odors shed from Olive, Orange, Lemon and Popineck trees, whose blooms give their wealth of refined fragrance to the air.

Not far from Charleston, on the old Drayton estate, is Magnolia, where is one of the most magnificent gardens in South Carolina. Here are Camellias from eighteen to twenty feet high; Azaleas sixteen to seventeen feet through, by twelve feet high; others nineteen to twenty feet through, by thirteen feet high; showing throughout gorgeous masses of bloom in all shades of red, from softest pink to richest crimson, pale flesh color to purest white. These Azaleas are something remarkable; you do not see their stems or trunk, and no green relieves the great swelling waves of color that trail to the very ground, and rise to the height of twelve or thirteen feet.

The most perfect tree in this world, to my taste, is the Magnolia in its native forests; combining grandeur, grace and beauty. It overtops in height all contiguous trees, and folds about it its robe of thick, glossy, dark-green foliage and embellishment of stately, milk-white blossoms, with a classic statuesqueness, like a Roman beauty in *pose* as an artist's model for some splendid empress of imperial times.

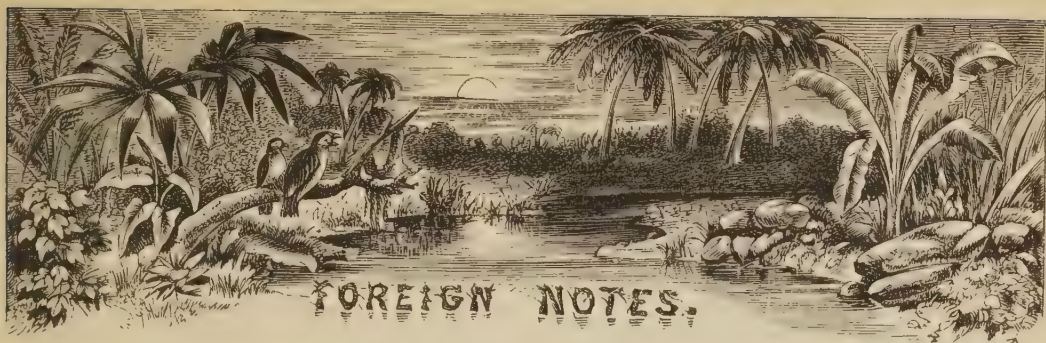
Down about the swamps of the Edisto and Combahee rivers, and all through that region wherein is located the old Indian village of Pocatigo, the flower-growth, influenced by the near ocean, is quite tropical in its character.

Columbia has always been famous for its gardens, one great charm of which is the foliage of fruit trees, planted near doors and windows. In June, Apricots are ripe, and from every garden gleam these golden plums, shining among emerald leaves.

Traveling on the railroad from Columbia to Wilmington, No. Carolina, in the early spring, we see tangles of yellow Jessamine vines everywhere in the woods, and adorning many a cottage door near the rustic little depots or stations. These amber beauties climb up the tall Cypresses in the swamps, twisting their fragrant sprays among the hoary moss banners; and higher up, in the Pine region, thrust their sweet blandishments among the very Pine needles, the vase-shaped blossoms shining fifty feet in air, and sweetly perfuming all the woods. Among the dead leaves in February, wild Violets are in full blow, though they give no sweet odors like their cultivated sisters. The Woodbine, too, is an *habitué* of South Carolina forests, as is the Virgin's Bower, with thyrses of blue and white papilionaceous flowers. Later, the wild highbush Honeysuckle is in bloom; flowers rosy-pink, white-streaked and fragrant. The Huckleberry, too, and Haw, bear clusters of pretty, delicate white flowers. The Calycanthus or "Sweet Shrub," is dear to all children who have the privilege of going flower-hunting. It grows wild, and is prized in gardens too, not for its beauty, the flower being only a homely, bud-shaped, red-brown thing, but it has a fragrance suggestive of ripe strawberries.

In June, the Water Lilies cover the surface of South Carolina streams; lovely, fringe-petaled white blooms, with golden stamens, steeping the senses with their subtle odor. In August and September you may see gardens of flowers in the "up-country" three hundred acres in extent—all blossoms of the same plant, pink and white cotton blooms. The Cherokee Rose is so much used for hedges that it deserves especial mention among the flower-growths of the State; and the Palmetto, from which the State takes its name, though confined to the coast, is of course a feature. It is a low tree, with rough, straight, scaly trunk, crowned by a cluster of dull-colored, broad fronds. It was selected for the flag from its being instrumental in saving Fort Moultrie from the British in the Revolutionary War, the fort having been built of Palmetto logs, was impervious to shot, which lodged in the soft, spongy wood.—MRS. V. D. C., *Hernando, Miss.*

It is interesting to learn of the plants and flowers of other States and lands, though many of us will never enjoy the Cherokee Roses or the Magnolias.



THE SUGAR BEET.

Many efforts have been made to discover a plant that would grow in Northern latitudes and produce sugar in paying quantities. All our readers know of the Sorghum, and the interest excited by its introduction here, but we do not think it will ever make the world much sweeter or richer. The Beet-root is the plant upon which all dwellers in the North must rely for sugar, if they are resolved upon home production. Sugar production from Beet-roots has been quite extensively conducted in both France and Germany, and with most satisfactory results as to quality and profit. Some time since we received from VILMORIN, ANDREUX & Co., of Paris, a circular giving some interesting facts regarding the sugar-producing qualities of the different varieties, extracts from which we thought might be interesting and profitable. It will be seen that size and smoothness is obtained at the expense of the sugar; but even this is not a serious objection in some places, especially if the remains after extracting the sugar can be utilized for feeding purposes. The profitable consumption of the refuse is a point that must not be discarded by any Beet-root sugar-maker, if he would have his work profitable.

"The ideally perfect Sugar Beet is essentially different according to the country and conditions of its production. In places where, as in Germany, a tax is levied on the amount of Beet-roots worked up, or what is the same thing, according to the capacity of the hydraulic presses, as in Russia, the rich roots which contain a large proportion of sugar in a small bulk obtain the preference, as is natural. In France, on the other hand, fixed custom, the nature of the rotations established between the manufacturers and growers, the important part played by the spent pulp for feeding purposes, all unite in favoring the choice of heavy roots of medium richness. There is reason, too, in this preference; for the varieties which grow into heavy roots are just those which give the largest amount of sugar per acre, although the yield of each individual root is less. For instance, we

have rarely seen the German varieties, or even the Improved Vilmorin, give as heavy a figure of production for the same area as the Collet Rose variety. It is a generally admitted fact that the different varieties of Beet-root are rich in sugar in inverse ratio to their bulk. Taken in its general meaning this proposition expresses a profound truth, but it is also certain that judicious selections can vary this ratio and enrich a given variety of root in sugar without increasing its bulk. It is in such modifications as these that we must seek for the practical improvement of the Beet-root; in fact, the point to be aimed at is the creation of a series of varieties which would give a maximum of richness in sugar,

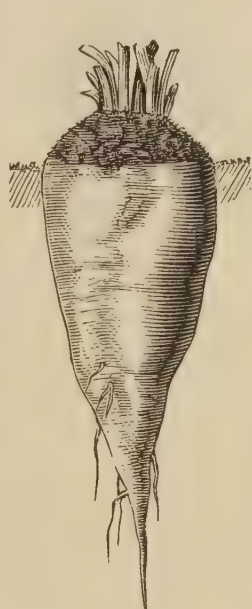


FIG. 1.



FIG. 2.

but only in conjunction with a maximum of size characteristic of each particular variety. It would of course be vain to try and grow a Beet-root which would give both maxima at their fullest height: the sooner, therefore, that such an idea is abandoned the better chance will there be of avoiding mistakes and useless researches. Great saccharine richness must necessarily be allied with abundant foliage and root-lets, and those varieties which are rich in leaves

and rootlets cannot become large without losing the outward qualities of regularity and neatness, which are in a great measure indispensable to a good strain of Beet-roots. Starting, then, with this point in view, that the different circumstances under which the consumer and producer find themselves placed, necessitates different varieties of Beet-roots, let us examine the varieties actually known, and see what they may become under the influence of the principle of selection properly applied. The White Sugar Beet of Silesia, which is the origin of all the others, is still preferred throughout the greater part of Europe; the root is of medium size, almost entirely buried, with a white, slightly rough skin, the foliage being spread out rather than upright. It is rich in sugar, yielding generally from 12 to 14 per cent. It will grow well even when crowded together, and does not require a very deep soil. At the present time, when varieties rich in sugar are eagerly sought after, the Acclimatized White German (fig. 1) is one to be most highly recommended. There are also several sub-varieties



FIG. 4.

FIG. 3.

which have been obtained by selection, amongst which may be mentioned the Magdeburg, somewhat small, long, and very regular; the Breslau, which is shorter and thicker; the Imperiale (fig. 2,) first grown by Knauer, which is long, tapering regularly in the form of a Carrot, with light curly foliage drooping on the ground.

“The Grey-topped Beet root (fig. 3,) or the

Northern Reddish-grey, is the most productive and perfectly shaped variety of all. The foliage is somewhat scanty, and about a quarter of the root is above the ground. This portion of the root is grey, greenish, or brown, and is smooth and even like the part below ground, which is more or less reddish. On the other hand it is the least rich in sugar of all varieties of Beet roots; and it is now-a-days entirely out of favor with most sugar manufacturers. We believe the sentence to be somewhat severe, for the Grey-crowned Beet-root is capable of yielding, with proper culture, an amount of sugar that would rival those of the two other varieties just mentioned; and we believe that it could be sensibly improved in the way of yielding an increased amount of sugar without losing its qualities of form and size. Vilmorin's White Improved (fig. 4) is the direct offspring of the Silesian White. M. LOUIS VILMORIN, by careful selection through several generations, has, as it were, compelled this variety to yield from 15 to 18 per cent. of sugar, a standard to which it has now kept for several years. Experiment has shown that it would be hopeless to try and obtain a still greater yield of sugar, for the plant would then cease to grow with sufficient strength.”

AMPELOPSIS HEDERACEA (*Virginian Creeper*.)

—This is one of the most ornamental and rapid-growing plants we have. It flourishes admirably on a north wall; in fact it is a most accommodating plant, thriving everywhere, even in the heart of London, running around and over balconies, and draping them and other structures during summer with festoons of its tender young shoots. In the autumn the leaves turn to a brilliant crimson hue, which for a short time is very effective. We have it growing intermixed with Irish Ivy and covering the wall of a residence forty to fifty feet high. *Ampelopsis Veitchii* (*tricuspidata*) is very suitable for walls, and is as remarkable for its elegance of growth, its refined and graceful appearance, as for the tenacity with which it clings to the object against which it is planted. It will thrive well in a north position, but a warmer aspect brings out better the brilliant color of its leaves in the autumn. We strongly commend this plant to our readers.—*Journal of Horticulture* (London.)

THE *Nelson Daily Times* of New Zealand states that “a gigantic Black Birch tree was felled recently at Staley Creek, near Ahaura, measuring 57 feet in circumference at the butt.”

GARDEN PARTIES.

All our readers, we presume, know that Garden Parties are common and popular on the Continent and in England, and have been so for a good many years. A correspondent of *The Garden* (London,) says:—"The now favorite mode of entertaining large parties in private gardens, adopted even by Royalty, would appear to be but of recent origin in England. In the 'Pictorial Calendar of the Seasons,' MARY HOWITT says:—"Speaking of the garden at North End House, Twickenham, we are reminded of the social enjoyment which it is made to furnish in the season of its Roses, when Mr. BOHN's numerous friends assemble at a floral *fete*. Taking such an entertainment as a type of what a garden party should be, we would recommend beautiful flower gardens to all the fortunate possessors of them as the most noble reception-rooms for even hundreds of guests, who amid the beauties of the summer garden, and in the open air, appear to great advantage, and physically and mentally are brought into harmony with the scene. Such *fetes* are refreshing and exhilarating, and might be advantageously introduced among persons of moderate fortune, who, in well-kept and pleasant gardens, might entertain their friends without any extraordinary expense, much more agreeably than within their houses, where the rooms are often small, and, especially in the summer season, unfit for the accommodation of numerous guests.' I have had the pleasure of being present at one of Mr. BOHN's recent garden *fetes*, for which his grounds are so admirably adapted, and I can heartily confirm MARY HOWITT's emphatic praise of them, and I can join in her recommendation, which, however, has been too extensively followed to be longer needed. Mr. BOHN originally acquired a taste for garden parties in Germany, where, in his early years, he used to be invited to them, both in summer and in autumn, and especially to a Rose garden *fete* in the neighborhood of Leipzig." These rural parties are becoming popular in America. We witnessed scores last season, and they are certainly just the thing for our reliable, fine and warm summer evenings, when attendance at an in-door concert or party is a misery.

FORCING LILACS IN THE DARK. — The florists of Europe, in the autumn, take up roots of Lilacs from the open ground, and remove them to a dark house which is kept very warm, almost up to 100 degs. In these heated, dark houses, flowers are produced from the common pink Lilac of pearly whiteness, and in great abundance.

OUR ENGRAVINGS.

"VICK'S *Illustrated Monthly Magazine*" is a new publication illustrated with numerous wood-cuts and a colored plate. The articles are numerous, varied and short—a great recommendation. The editor proposes to furnish electrotypes from the illustrations at cost price to other journals. We trust that those who make use of this offer will have the honesty to acknowledge the source where the cuts were obtained.—*London* (English) *Gardeners' Chronicle*.

We have for several years made editors presents of cuts which they have selected from our works, in some cases paying express charges, while in others editors have very generously forwarded enough to pay such charges, and sometimes more than we needed for the purpose. For the sake of equalizing the matter, and allowing editors to use any engravings we publish on the same terms, we proposed, in our January number, to furnish any editor with electrotypes of any engravings selected from our MAGAZINE for 15 cents a square inch, and for this we also prepay express charges. As a result we have had many applications for engravings which we have supplied, and editors have used them and columns of matter extracted from the MAGAZINE, but only in two cases have we noticed any credit, or any intimation given of the source from which either matter or engravings were obtained. Indeed, the *Canada Farmer*, published in London, Ont., very coolly remarked that the engravings in his columns were some that he bought in Rochester, and that was all. But, then, when the engravings were ordered the editor was on his way to New York city, and at the time might not have got over it. We would not like our English friend call in question the *honesty* of such practices. Now, gentlemen of the press, this fifteen cents a square inch hardly pays the cost of electrotyping and expressage, and as a little compensation, as well as for honesty's sake, do give us *credit*.

PERSIAN LILACS IN COVENT GARDEN.—In addition to these Lilacs being grown in large quantities at this time of the year to furnish flowers in a cut state for the London florists, we now find neat little plants of them full of flower being offered for sale. They are furnished with a clean stem of some six or eight inches high, surmounted by a compact head of green shoots, bearing from eight to twelve trusses of delicate blossoms.—*The Garden*.

"GOOD VEGETABLES," says the *Gardeners' Chronicle*, "are secured more frequently by a careful selection of seed than in any other way, and the high quality which they have attained is chiefly due to the great care of our enterprising seed-growers."

THE BULB SEASON OF 1877.

In July last we were informed by our correspondents in Holland of the poor condition of Hyacinth bulbs, and we fear the results this winter and spring will be hardly satisfactory to either American or English planters. The following, from the *Gardeners' Chronicle* (London) describes the trouble:—"The quality of the bulbs has been, with the exception of Hyacinths, very good, and the results at present visible are equally satisfactory. Hyacinths have been only 'middling,' but this was due to the blight, mildew, or frost, as it has been variously termed, which visited the Hyacinth farms in May. Nothing so destructive was ever seen by 'the oldest inhabitant;' the appearance of the foliage resembling the withering effect of a hot, dry blast. Thousands of splendid bulbs were rendered worthless, and during a visit paid at planting time in September lay shriveled and useless on the warehouse shelves. The warm genial weather aided the recovery of those only slightly injured, and the bulbs, although smaller than usual, were not materially affected so far as their blooming properties are concerned; such at least was the opinion of a Dutch grower of many years' experience, and thus far the results justify that opinion."

THE ESCHSCHOLTZIA. — The Eschscholtzia Californica, as its name indicates, is a native of California. We have seen it in Europe grown by the acre for supplying the world with its seeds, but no where so gorgeous as in its native home. Several varieties have been produced, differing more or less from the original, but none of surprising excellence. This winter, Messrs. CARTER & CO., of London, England, have presented to the public two new varieties, one called the *Mandarin*, the face of the flower being saffron, and the outer surface of the petals reddish orange; and also a double flower, striped with saffron and orange. If the latter comes true from seed it will prove to be a desirable acquisition.

THE DUTCH TULIPS AT THE APPROACHING PARIS EXHIBITION.—It will indeed be sincerely regretted if, after the elaborate and carefully studied national design in which the splendid contribution of 40,000 double Tulips sent by the city of Haarlem for the adornment of the gardens at the Paris Exhibition have been planted, the flowering of these beautiful bulbs should take place at the commencement of the month of April, and be all over and the beauty gone before the opening of the Exhibition on May 1st. There is some talk of an effort to retard their growth by covering the beds.

STREET TREES.

An English journal has the following on this subject:—"It is probably well known that many of our streets are formed of refuse (I do not refer to the metaling) not at all adapted to the growth of trees. The materials used, indeed, are often positively injurious to all kinds of trees and shrubs. The refuse from gas-works, chemical and metal factories, stiff clay, &c., in fact, any rubbish that may come to hand, is used for filling up where necessary, often to a depth of several feet. Gas-pipes, sewers, and drains of various descriptions run in all directions, often emitting vapors destructive to vegetation. Therefore, when it is proposed to plant the margin of a street, it is necessary to consider what should be done in order to secure success. First, then, it is most important, at whatever cost, that the trees should be supplied with suitable soil, and in such quantity as to give them a reasonable chance of becoming thoroughly established. To do this, it is necessary to make holes or pits in proportion to the nature of the subsoil, whether very bad, bad or indifferent, making the largest in the first case, and the smallest in the last. It is advisable to remove from eight to ten cubic yards at least where the subsoil is of a very bad description, coming down to four or five yards where it is indifferent. The depth of the holes should be from three to five feet, according to the quantity to be removed. Where good soil is easily obtainable, and the cost no object, the amount of excavation can be increased even further. In cases of leakage from gas-pipes and sewers carrying away chemical liquors, planting is extremely difficult, and can only be carried on by forming receptacles of brick, concrete, or other suitable material, sufficiently deep to be below the escape of noxious gases, thoroughly plastering both inside and out with cement, placing sufficient drainage in the bottom, and filling up with good soil. This is expensive work, but it should nevertheless be done where it is necessary to maintain a good line of trees. Trees planted in soil impregnated with coal gas have been known to die in two years, even after the leakage has been stopped."

THE ROSE. — Mr. RIVERS, the great Rose grower and Horticulturist, recently died, after completing his annual *Rose Amateur's Guide*, which has been published since his decease. In this, he says, "I conclude in the hope that some day every man in England may have a garden, and that rose growing will be considered one of the *Fine Arts*, calculated to refine both mind and manners."



HYGENIC INFLUENCE OF PLANTS.

MAX VON PETTENKOFER, a German scientist, — who has given special attention to hygienic subjects, and whose opinions are entitled to the very highest consideration, — in an article on this subject, and which has recently been copied into the *Popular Science Monthly*, gives a very interesting account of a series of experiments to ascertain the effect of plants upon the atmosphere of the rooms where they are growing. We can only give the main points.

“It is generally asserted that vegetation purifies the air, and chiefly by three functions: firstly, because plants absorb carbonic acid; secondly, because under the influence of sunlight they exhale an equivalent in oxygen; and lastly, because they produce ozone. These facts I need not demonstrate, as they have been placed beyond doubt by vegetable physiologists, chemists and meteorologists.

In the air of a closed apartment every person and every light burning makes a perceptible difference in the increase of carbonic acid in the air. Must not, therefore, every plant in a pot, every spray, any plant with leaves, make a perceptible difference in a room. Every lover of flowers may be pardoned for wishing to see this question answered in the affirmative.”

The experiments adduced show that although the tendency of plants is that indicated above, the process of growth and, consequently, of the assimilation of carbon and evolution of oxygen is so slow the effect is not perceptible.

“It would scarcely be intelligible if I were to calculate how much carbonic acid and oxygen a Rose, a Geranium, or a Begonia, would absorb and give out in a day, and to what extent the air might be changed by it.

Some will perhaps ask, and in some disappointment, ‘In what, then, does the hygienic value of plants and plantations consist?’ I consider the impressions which plants and plantations make upon our minds and senses to be of hygienic value. It is an old observation, needing no demonstration, that the cheerful and happy man lives not only an easier, but, on the

average, a more healthy life than the depressed and morose man. Medical men, and especially ‘mad doctors,’ could tell us much of the great value of a certain relative proportion of pleasurable and painful impressions upon health, and how frequently some unfortunate position, an absence of pleasure, or too much of painful impression, is the cause of serious illness.

I consider flowers in a room, for all to whom they give pleasure, to be one of the enjoyments of life, like condiments in food. It is certainly one of the most harmless and refined. We cannot live on pleasure alone; but to those who have something to put up with in life, their beloved flowers perform good service.”

Prof. KEDZIE, of the Michigan Agricultural College, some time since made a series of experiments to determine this question, and arrived at a result similar to the above. His experiments were made on the air of the College greenhouse, containing some six thousand plants, and show that the carbonic acid in the air of the greenhouse, in the day time, while the house had been kept closed, was materially less than that of the open air, and even at night it was the same or a little less than that of the “pure country air.” The variation, although in tendency to purify the atmosphere, is, however, so slight, and especially in the case of an ordinary room with a few plants, the influence must be considered imperceptible.

The experiments are conclusive against the idea that growing plants may injure the quality of the air.

TEN WEEKS STOCK.—A very pretty flower of the double Ten-Weeks Stock we received from Mrs. LANG, of Sutter Co., California, who writes that the plant had been in full bloom for eighteen months.

A LITTLE PATIENCE, PLEASE.—We shall, as far as possible, and as soon as possible, answer every question, and give information on every subject; but our friends must have a little patience. We cannot do all at once.

THE CHINESE NATIONAL FLOWER.

For a long time we have observed in the papers allusions to a wonderful flower from China, indeed the national flower of that country, as the Rose is of England, and the Iris of France. Since the first of January several inquiries have reached us asking for name and description of this Chinese flower, and among them the following:

MR. JAMES VICK:—*Dear Sir:*—Please tell us in the MONTHLY, the name of the flower called, on enclosed slip, the "Chinaman's National Flower." Perhaps the whole slip is of enough interest to insert in the MONTHLY.—A. B. C., *Wabash College, Crawfordsville, Indiana, Jan. 16, 1878.*

The extract enclosed in the above note we give in full, and it has doubtless met the eye of many of our readers in its journeyings among the papers:

THE CHINAMAN'S NATIONAL FLOWER.—The Chinese residents of this city to a man and to a woman, are now diligently engaged in cultivating what appears to be their national flower; certainly a flower loved by all of that nationality. It springs from a bulb somewhat resembling an onion, and has leaves resembling those of the wild flag found growing in swamps. From the top of a stem rising through the centre of the tuft of leaves are put forth a considerable number of blossoms somewhat resembling small lilies. No soil is required in the cultivation of these flowers. All that is necessary is to place the bulbs in a shallow earthen vessel and pile small fragments of rock about them, and then keep them well watered. The Chinese plant them in season to have them bloom on their New Year. The bulbs are all brought from China. The Chinese say that there is but one place in China where they grow wild and naturally. The Chinese not only love the flower themselves but are also pleased to see it growing in the houses of their employers. They say it will only grow and blossom well for the good, and have many superstitious notions in regard to it. The Chinese laundrymen frequently present these plants to their customers, and at every visit after they have seen them properly planted stop to trim them and give them some little attention. To forbid the importation of these bulbs would probably drive all the Chinamen out of the country. It might be tried if all other means fail. To deprive "John" of his beloved lily would surely make him quite sick at heart.—*Virginia City (Nev.) Territorial Enterprise.*

Having spent a good deal of time among the Chinese gardeners in California, and taken special notice of their flowers and vegetables, and never having observed anything wonderful, or worthy of such a glowing description, we addressed a note to well-known florists of San Francisco, asking for information on the subject, to which we received the following response:

MR. JAS. VICK:—*Dear Sir:*—The *Chinese Flower* of which you inquire is nothing but a very common *Garden Narcissus*.—MILLER & SRIEVERS, *San Francisco, Feb'y. 2, 1878.*

This was about what we supposed, though not willing to hazard an opinion without full information. Many of those writing us on the subject seemed to think that the flowering of this Chinese bulb in water or moss, or sur-

rounded with damp gravel, was something exceedingly strange, while everybody ought to know that the *Polyanthus Narcissus* is one of the best of our winter-flowering bulbs, and will bloom in water quite as well as the *Hyacinth*. In our *FLOWER AND VEGETABLE GARDEN* we thus speak of this flower: "The *Polyanthus Narcissus* is not quite hardy in this climate, unless planted in a sandy soil, and well covered before winter, and then often fails; further



POLYANTHUS NARCISSEUS.

South it does well. For flowering in pots in the house the *Polyanthus Narcissus* is unsurpassed, and nothing can be more satisfactory for this purpose. It will also flower well in glasses of water, like the *Hyacinth*, and it is desirable to grow a few in this way, yet nothing looks so natural and nice as a good healthy plant in a neat pot of earth, and no other method leaves the bulb in a sound, healthy condition for the next season."

As will be seen by the following, a lady of Michigan, who wrote us for information in January, has had an opportunity to see the flower, and her statement confirms that of our California correspondents:

MR. VICK:—Since I wrote to you about the Chinese flower I have seen one. A lady returned here from San Francisco about four weeks ago, and day before yesterday I heard she had the bulb in blossom; so yesterday I went and saw it. It is not a Lily at all, but I should think belonged to the *Narcissus* family. The flower was white, with a yellow cup, like the *Polyanthus Narcissus*, just about the same size and habit of growth, but shape and size of leaf like the *Daffodil*, and the root was larger than either, throwing off its offsets sideways, as the *Polyanthus* does.—MRS. M. D. JONES, *Dexter, Michigan, Feb'y. 9th, 1878.*

This strange flower is no doubt a variety of *Narcissus* that can be had of any florist in Europe or America.



THE LEGEND OF THE WHITE CHRYSANTHEMUM.

A Moorish lady slept and dreamed of him she loved the best,
Her maidens fair, in colors rare, sang of his lordly crest.

All clad in Moorish mantles fine, of colors rich and gay,
They sang of him, and span for her who near them dreaming lay.

Span rosy threads and golden threads, and tossed the spangled heads,
And jeweled hands in stitches rare embroidered shoons of red.

Her minstrel touched the soft guitar to lays of tender love,
While Lady Zara moaned in sleep; moaned as a mateless dove.

The gems upon her bosom played, her brow was knit with pain,
The while the maidens span and sang, "He cometh not again!"

Her pallid cheek and sudden cry were as a king's command,
And silence struck the singer's tongue, the weaver's flashing hand.

"Oh, I have dreamed!" sweet Zara cried, "Oh, such a dream of ill!
Read me its rede, its shrieve and shroud, and let me weep my fill.

I was no maiden in my dream, nor yet a wife was I,
For I was wed but one fair moon before I saw him die!

I am an hungered for my love; now tell me my sad fate:
Or make me smile at dreams, sweet maids, at dreams disconsolate!"

The youngest damsel tossed her locks, the eldest hung her head,
While Zara's tiring woman spake, "Now don this tire of red.

For vivid bloom foreshows thy dream; awaits the coming hour.
The pang of parted love is past; its bud expands in flower."

But Zara's minstrel swept the strings to drown a passing wail
Of autumn winds. And hark! a horse! a horseman! "Hail!"

Then Zara to the casement sprang; thrice bade the horseman, "Speak!"
No word spake he: but from his vest took that which blanched her cheek—

Two ringlets dark, in one love-knot! With shriek and smitten breast,
Poor Zara's leaden weight of woe fell from that height to rest.

October Pinks were glowing then, and pillowed Zara's head;
And thus their sweets were mingled with love's sighs from that low bed.

And lo, the red Chrysanthemums on which she dying lay,
Grew white as death; and snowy-white they bloom unto this day.

'Tis thus the White Chrysanthemum, whose odors sweeter rise,
When lying crushed, an emblem is of love that never dies!

THE TUBEROSE.

The Tuberose is one of the whitest and sweetest and most lovely of flowers and most loved. It is a native of the East Indies, and emigrated to Europe more than two hundred years ago. Until recently Italy grew the tubers for Europe and America, but latterly it has been discovered that we can produce them in America of superior quality, and American grown Tuberoses are advertised by many of the Florists of Europe.

In an old volume entitled, "*The Flower Garden Displayed*," published in England in 1732,

we find the following description of the Tuberose: — "This is a bulbous Root, brought to us from Italy every Year. It brings a Spike of White Flowers on the Top of a Stalk about three Foot high, and is very sweet-scented. The Flower-Buds are a little tinted with a Lake or Carmine Colour. We raise this by planting the



roots in pots of fine Earth and plunging them in Hot-beds in *February* or *March*, but give them no water till they Sprout, then we have this flower in July; or else set the Roots in a warm Border, under a South Wall, and they will some of them flower in August, and some in September, or this Month, or the next: when these blossom, you may pot them, and set them into the Green-House and some will even bloom in *December*." The accompanying little engraving is from this work, and shows the character of the Tuberose almost a century and a half ago.

Our warm summers are favorable to the perfection of the flowers, and the reports we receive from the South and South-west are truly wonderful. The Tuberose delights in a light, rich soil and plenty of heat, with a fair quantity of moisture. The tuber flowers but once, but new tubers are formed each season, that after a year's growth make flowering tubers. To witness the wonderful cluster of flower stems described in the following letter would have paid for a long journey:

MR. VICK:—Your description of the Tuberose tempts me to tell you of one I had to bloom summer before last. I obtained, in the fall, a few bulbs, among them one Tuberose. I had a fancy to grow one in the house, planted it in a box in February. It put up a flower stem six inches, did not make a single bud. The first of April I planted it in the garden, it grew fine all summer,



TUBEROSE BULB AND PLANT—BOTH REDUCED.

and winter with hay thrown over it. The following June it commenced putting up flower stems, two came up nearly at the same time, grew nine feet and bore fifty flowers each. The third stem measured ten feet, bore fifty-five flowers; the fourth stem did not grow quite so tall as first, bore fifty flowers; fifth stem bore forty-seven flowers; the sixth, thirty-eight; the seventh, thirty-six; the eighth, twenty-eight flowers, and did not grow over two feet. Did any of your customers ever give such a discouraging account of a Tuberose. My experience with that one has cured me of all fancy for growing one in the house, unless Mr. VICK will guarantee one to grow not over two feet.—S. T. R., *Abbeville, Louisiana*.

The first winter, on account of some injury to the flowering stem, which forms in the center of the tuber, it made but little growth, and therefore took none of the nourishment provided for it. This was all given to the young tubers that formed around the old one, but they



TUBEROSE BULB WITH TWO FLOWER STEMS.

were not large and strong enough to flower the first summer, and with a little protection the winter did them no injury. The second spring, instead of one tuber our friend had a cluster

ready for work, and the result must have been a wonderful exhibition of floral beauty.

In a previous number we stated that a Tuberose flowered but once, the tuber, when mature, having a single crown or bud, and when this flowered or became destroyed it would make offsets, but give no flowers. To this some of our friends object, as will be seen by the following letters :

MR. VICK :—A Tuberose bloomed this summer in our yard which had two flower stalks, and to convince you I send you the bulb, at least as much of it as I could detach from the small bulbs, with a section of the flower stalks attached. The second stalk was much more slender than the first, and the flowers were smaller, and it bloomed very much later.—L. M. B., *Greenwood Lake, Kentucky*.

MR. VICK :—I must tell you about a Tuberose procured of you last spring, which had two strong flower stems—the first one had twenty-eight blossoms, and the last one nearly as many, and I know it was only a single bulb like the rest. I make this statement, having seen your remark that you thought a Tuberose that had two stems must be double.—MRS. J. B., *Butler, Ohio*.

From the tuber kindly sent us we made the accompanying engraving. These bulbs formed double crowns, a freak which we occasionally observe in almost every class of plants. Double kernels in nuts, and double buds in fruit trees are not uncommon.



TUBEROSE FLOWER—FULL SIZE.

MR. VICK :—I had a Tuberose last fall that had eighty-four buds and twenty-three flowers at one time, a double one you sent me, and it was six feet high.—MRS. M. H. LOWRY, *Washington, Ark.*

As before observed, our Southern friends obtain wonderful results from the Tuberose. Those of us who dwell at the North must be satisfied with less of beauty, but we get enough to well repay us for our labors. A gentleman at Albany, Mo., was far less successful.

MR. JAMES VICK :—Please tell me in your MONTHLY what to do with my Tuberoses. Last spring I set out the bulbs which had flowered last year, dividing the sets into single bulbs, many being very small. They apparently grew finely all the season, which has been very long and favorable, (only dug them yesterday, Oct. 9,) having had no killing frost yet. On lifting them I find out of say two hundred bulbs that but very few have increased any in size, and scarcely any seem large enough to bloom next year. Please inform me wherein lies the failure to have good bulbs. I also got a small quantity of Tuberose bulbs for immediate flowering, and set them out at the usual time. Of these about one in four only threw up flower stalks, and those very late, the remainder threw up none. What could ail them? The season was a remarkable wet one until July, then very dry for a few weeks, then moderate rain and cool weather during most of August, with a very warm September.—C. G. COMSTOCK, *Albany, Mo.*

There must have been something about the soil or season quite unfavorable to the Tuberose, but just what the difficulty was it is impossible to say. The flowering stems of the tubers may have been injured by cold or dampness, but this could not have been the trouble with the offsets. A good, warm soil and rich, never fails with us to make good tubers of the offsets, though in a dry time we are compelled to water artificially. In a cold, wet season we sometimes partially fail.

NEWLY-POTTED ROSES.

MR. VICK :—I have for several years, in the spring, had young Rose roots from the East, potted them carefully, put them in the shade for a few days, and then exposed them to the sun. They would begin to make new growth and bid fair to do well for a short time, and then die down until entirely dead—the earth kept moist and tops sprinkled. If you can say something about the why and the wherefore, in your MONTHLY, you will greatly oblige. I may then undertake to try again, with new hopes of success.—B. A., *Salt Lake City, Utah*.

The exposure of the plants to the sun so soon was the cause of the trouble, no doubt. It would have been well to have given them partial shade until autumn. The pots should have been sunk in the earth, if in the open ground; or if on a verandah, damp moss around them would have been of benefit. This subject is discussed in another place.

VERBENAS FROM SEED.—Please allow me to tell you of my success in raising Verbenas from seed. I bought a package of mixed colors last summer and was delighted with my success. I grew them in cans placed in the north window, and then transplanted them in the garden, and think I never saw a finer show of Verbenas. I have Phlox Drummondii in my window this winter: they make pretty house plants, as they bloom freely all winter. Did you ever tell your friends that Pansies grow finely in the house? I have had them bloom all winter: have one in bud now.—MRS. E. T., *Rotterdam, Kansas, Jan. 1, 1878.*

WINDOW-GARDENING.

MR. VICK :—*Sir* :—I have read the first number of your MONTHLY with interest, and as I am to become a subscriber, I venture to ask a few questions which you will oblige me by answering through the medium of your MAGAZINE. Why do the buds on my Begonia Sandersonii seldom open, but after a while drop off? It cannot be owing to the temperature of the room, as they did just the same when the plant was out of doors in the summer. Can any situation be too warm for Clerodendron Balfourii? The catalogues say they require strong heat. Mine, purchased in the fall and cut back almost to the root, stands in a south window on a shelf midway of said window, and the leaves are beginning to turn yellow and drop. A microscope reveals no insects. I have no such success with Petunias indoors as your correspondent from Michigan, but think them very desirable both for winter and the summer garden. Why do they lose their markings when grown in the house? Those which in the open ground are wonderfully rich and velvety, and the admiration of all who see them, become simply dowdy when cultivated in my sitting-room. Another correspondent writes you of self-grown Abronias, but I cannot raise a plant from seed. I have tried with yellow and pink, and succeeded once in getting one plant of the latter, but it did not amount to anything. Do Roses grow as well in shade? I had not supposed so until I read what you say of "Moss Roses in Orchards."—Miss J. B. W., Duxbury, Mass.

Our correspondent, evidently has an unsuitable place for her plants—precisely what the trouble is we cannot say, but probably the atmosphere of the room is too dry, possibly the heat is too great at certain hours of the day and the temperature may run too low at night—the soil in the pots may be unsuitable.

The temperature should range from 60 deg. at night to 75 deg. in day time, and evaporating water should constantly supply the necessary moisture to the atmosphere. The soil should not be heavy and stiff, but made porous by the suitable admixture of sand. If all the conditions are favorable, it then requires an interested operator to raise good plants. A person should watch the plants in all their stages, and become intimately acquainted with their peculiar wants.

The husk of the Abronia seed should be removed when it is sown. In the case of our correspondent we are not informed whether this was done or not.

We would advise any one that wishes to become a good plant grower not to give up trying with one or two failures of a certain kind of plant. Some one succeeds admirably with just the kind of plant you have failed with; if you will patiently work with good resolution until you have fully succeeded with some plants which you have hitherto failed with, you will have done much to establish habits that will enable you to succeed more uniformly and more generally in the future. When a plant fails you, use a little "grit" patiently.

Under the hot sun of our climate roses do best in partial shade.

MONSTROSITIES.

MR. VICK :—I have received the first number of your MAGAZINE, and am delighted with it; I found information in it which I had looked in vain for in the various Encyclopædias and floral catalogues. The first cut on page 8, in the article entitled "Botany for Little Folks," reminds me of a singular experience I had with a packet of *Delphinium nudicaule* seed which I planted, last spring. The soil was prepared, and the seed planted in a tin basin, and in the course of two or three weeks five or six came up about an inch, and spread out the cotyledons or seed leaves, and, although they remained green and apparently healthy, no second leaves made their appearance between the seed leaves, as in the case of all other seed I have ever seen grow; but, instead, branches bearing the second leaves came out of the stem near the surface of the soil, and developed quite a bush before the cotyledon shrivelled up and died. Was not that a curious freak of nature? or, is that the usual manner of development in the species?—L. W., Washington, D. C.

The instance given above is that of a monstrous or abnormal growth. If it had appeared in one plant only we should not hesitate to ascribe it to some injury, or to some unusual treatment to which it had been subjected, but, according to the statement, all of the plants that grew developed in the same manner. Evidently they were, all alike, under some influence acting uniformly to prevent their proper growth. In an ordinary way, the plumule of each little plant should have erected itself in the surrounding tissues of the cotyledons, but, instead of so doing, it divided and thrust itself by two branches through these tissues. We cannot make an explanation of this case. Our informant has given but few of the conditions under which these plants were raised. Possibly a series of experiments in similar and slightly differing conditions might reveal the real cause.



MR. VICK :—Will you be kind enough to tell me in one of the spring numbers, what treatment *Acroclinium*, *Helipterum* and *Rhodanthe* need? I do not have as much success with them as with my other seedlings. Do they need a sheltered situation, and much sun?—MRS. C. A. R., Salem, Mass.

We do not feel prepared to give such information as our correspondent seems to desire. Every year almost we grow acres of these flowers for cutting and drying, as well as for seed, and for a good many years we have not had the least difficulty, scarcely losing a plant. Some years ago we observed the plants drying about the time they commenced flowering, and discovered that the roots were injured by the cut-worm, which seems to have a great liking for this class of plants. Until this discovery we had supposed that the plants were suffering from the sun. Perhaps some of our readers may have encountered and conquered difficulties, and can teach from experience.

ONION CULTURE.

MR. VICK:—In the last number of the MAGAZINE I noticed some remarks on Onions and their culture, but I am quite sure others, as well as myself, would be well pleased with still more information. How much black seed do we need for an acre; how early is it safe to sow; which, if any kinds, are especially suited to warm or cold soils; how must we cultivate; is the Potato Onion or Top Onion desirable, or the Sets? In short, all the information I can get about Onion culture. There is great lack of knowledge on this subject, and in some places it has been found that there are other crops that will pay the farmer better than wheat and corn.—J. M. S., *Michigan*.

The Onion, to be grown successfully, must



WETHERSFIELD. EARLY RED. DANVERS YELLOW.

have a *rich* and *clean* soil. If poor it will never produce a paying crop, for no one can afford to sow, and weed and keep clean a field of Onions, and harvest half a crop. The profit is in the difference between a poor crop and a good one. If the soil is foul, abounding in weeds, the cost of keeping clean is so great as often, even where a fair crop is grown, to absorb the profit in extra labor for tillage. Enrich the soil with well-rotted manure, and get the seed in early, just as soon as the ground



RED ITALIAN TRIPOLI. NEW GIANT ROCCA.

can be made ready in the spring. The Onion makes its growth early, and unless pretty well formed before hot, dry weather, in the middle of summer, the crop is almost sure to be a failure.

Sow in broad, shallow drills, the drills, say four inches in width, and not less than a foot apart, using about four pounds of seed to the acre. If the young Onions come up too thick, which is very apt to be the case, thin them out when three or four inches in height, so that they will stand about two inches apart, and and keep the soil clean and mellow. Disturb the growing plants as little as possible, and do not earth up in hoeing, for the Onion likes to grow upon the surface of the ground.

In the latter part of summer, when the tops are ripened, pull them up, let them lie on the surface of the ground a few days, then take off

the tops, place them in small piles for a few days longer. See that they do not heat in the piles, and they are ready for storing or sale.



TOP ONIONS.

SETS.

The American varieties are the best for the North, and are the best keepers. The hardiest and most productive is the *Wethersfield Red*, but for a cold, mucky soil, the *Early Red* will succeed where other kinds fail. One of the best in the world is the true *Yellow Danvers*, a fine, large, beautiful—almost globe-shaped—Onion, with a rich brownish, nearly orange-yellow skin. It will not give as large a crop as the red, but in most markets will sell at a higher price. There are other varieties, but these are best for the main crop.

In Italy and other portions of Europe, Onions are grown of wonderful size, from a pound and upwards, and of sweet and delicate flavor. They seem to be almost the peasant's staff of life in some parts, for a piece of brown bread and cheese, and a monstrous onion, furnishes him a luncheon or a dinner. Several of these foreign varieties have been introduced, and given the best satisfaction, and seem to do wonderfully well at the South where tried. The two largest are the *New Giant Rocca of Naples* and the *Red Tripoli*. A flat *White Tripoli* variety is an elegant, white-skinned Onion, and as large as the largest. These foreign varieties we would advise every one to try, but it would not be best to depend upon them for a main crop.



POTATO ONIONS.

Black Seed is what Onion seed is called, hence our correspondent inquires how much *black seed* is required for an acre. All Onion

seed is black, but this term is used to distinguish the true seed from little bulbs, which are often used for the growth of Onions. *Sets* are most commonly used, and these are little Onions grown very close together the previous summer, and when about the size of Peas taken up and dried. Set out in the spring they commence growing where they left off the previous summer, and soon make large Onions. If the sets have been grown too large, they run up to seed at once. The *Potato Onion* grows in clusters under the ground or on the surface, the bulbs averaging about an inch in diameter. These small Onions when planted produce a large one, and the large one the next year breaks into clusters. It is a valuable variety, of good flavor, but requires some care in keeping. There is a variety known as *Top Onions*. These produce a cluster of Onions on the top of the stem where the seed is produced in other kinds. These small bulblets are planted like the Potato Onions, and produce large ones after the seasons growth.

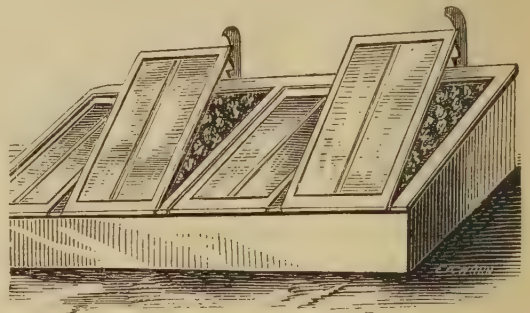
FLOWERS IN COLORADO.

A lady friend at Wayside, Colorado, to whom we sent a few Petunia seeds last season, gives in a very pleasant letter a little of her success and difficulties, but really we are quite sure there are very many with every seeming convenience that meet with less success with their flowers, and derive far less pleasure from their culture. Pleasures thus earned are doubly pleasant. In regard to the Petunias Mrs. J. says: "Last spring I planted the Petunia seed you sent me, and they are beauties. Some of your lady readers would be surprised to learn what a poor place I have for keeping house plants, and yet I have great success. We live in a log house on our farm, and the house has but two rooms. The room in which I keep my plants is a large one, used both as sitting room and bed room, having one large south window, and that window is the home of my plants. The sun shines in all day. I have a wide shelf at the bottom and one across the middle, and about a foot from the window four cords hang down from the roof to the center of the window, and on each of them a hanging-basket—one filled with Wandering Jew, one with Moneywort, another with Dew Vine, and the fourth with Bridal Wreath; and over the tops of these runs my Maurandya vine."

PANSIES ON NEW YEAR'S DAY.—Mrs. C. V. CARD, of Charleston, Ill., picked from her garden, on New Year's Day, a fine bouquet of Pansies, showing both the hardiness of the Pansy and the mildness of the season.

HOW TO MAKE A HOT-BED.

A hot-bed can be made on the surface of the ground, or it may be sunk a foot or two, by digging away the earth. Select a sheltered and sunny spot, and a pile of fresh, or unfermented horse manure, with the usual accompaniment of straw used for bedding, four feet in height and six feet wide, by any length desired. Make the pile carefully, so that it will be even, and well packed,—not loose and careless so that it will



settle unevenly. On this pile place a frame of boards, sloping towards the front, say four feet wide, and as long as may be required, something like the engraving, covered with sash. Inside of the frame place six inches or more of good mellow soil. In about a week great heat will be generated by the fermenting manure. Let the fiercest heat pass off, until the thermometer shows between 60 and 70 degs., and the bed is ready for use. Shade when the sun shines, either with a cloth or by covering the glass with whitewash. Give air on bright days. Let everyone who can obtain a few boards and some old sash try a hot-bed. It is splendid for starting seeds of flowering plants, and for early Radishes there is nothing like it. A few rows of Lettuce on the front edge of the bed, where there is most moisture on account of the dripping from the glass, will grow exceedingly tender. The Radishes will need plenty of air, or they will grow nothing but tops.

SHADY CORNERS.—With a little care the shady corners of our gardens that have usually been left to rubbish, and shady passages also, can be made the prettiest places in the garden by the use of a few Ferns—native ones from the woods will answer—and other plants like the Pansy and Daisy, and a few other things that delight in cool, shady spots. In a future number we will describe a few shade-loving plants.

VINEGAR FROM BEETS.—A correspondent writes us that a bushel of Sugar Beets will yield five gallons of juice, which will make as good vinegar as the same amount of cider, though the flavor is not the same.

THE GREEN FLY AND SCALE INSECT.

A gentleman of Annapolis, Maryland, wishes to know a great many things, almost enough to make a large book—and among others how to destroy the *Green Fly* and *Scale Insect*. We design to tell in our MAGAZINE everything worth knowing, but cannot do this all in one number. As the Green Fly and the Scale Insect seem the most active and troublesome, we will attend to them at once. Other subjects will not suffer by a little delay.

THE GREEN FLY.

The “green fly” ever plant raiser knows, and he knows, too, to his sorrow, how destructive it is if left to itself. The plants which this insect attacks are the softest and most succulent, and at the ends of the young shoots, and the softest leaves. It sucks the juices so as materially to



GREEN FLY (APHIS)
MAGNIFIED.

injure the plant in a short time. The insects of this kind (*Aphis*) increase with such wonderful rapidity that REAUMER has proved that in five generations one aphid may be the progenitor of six thousand millions, and there may be ten generations in a year.

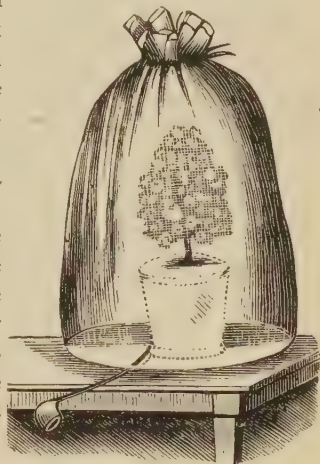
The insect inflicts the injury by means of a long rostrum or beak through which it sucks out the juices—the rostrum, when not in use, lies inflected beneath the breast. Their bodies, at the hinder extremity, are furnished with two little prominent or knotty openings, from which exude almost continually little drops of a sweet or honey-like fluid. As they take in great quantities of sap, they would soon become gorged if they did not get rid of the superabundant fluid. The leaves and bark of plants much infested by these insects are often completely sprinkled over with drops of this sticky fluid, which, on drying, becomes dark colored and greatly disfigures the foliage.

Of all the means that have been employed for the destruction of this insect, that which has proved most efficient and the one now almost universally practiced, is fumigation with tobacco. Some plants, such as *Heliotropes*, *Salvias*, *Lantanas*, and some others with soft, downy foliage, will not bear ordinary fumigations without injury to the leaves, and these plants, therefore, should not be subjected to it. Many plants in full flower, but especially *Pelargoniums*, will throw off their expanded blooms after smoking, and therefore it is best to remove such plants before fumigating. Care should be used also to have the foliage of all the plants dry, for if they are wet or damp the smoke will be apt to injure such as are of a soft texture. If the plants are in a conservatory attached to

the house, the time chosen for fumigating should be a still evening when there is little or no wind stirring, and the temperature of the house should be pretty well up, as then the insects are more active and the smoke will more easily affect them. A few chips or a little charcoal may be placed upon a small furnace or a pan, and ignited, and then a small quantity of tobacco placed upon it—the tobacco should have been previously dampened so as to prevent its burning too rapidly or blazing.

When only a plant or two, or a small number of them are to be treated, they can be fumigated

under an inverted barrel or large box in a back room or shed. Single plants may be fumigated by making a bell of a newspaper, as illustrated in the engraving. The smoke can be introduced by means of a tobacco-pipe. Fill the bowl two-thirds full of quick-burning tobacco, and



after lighting it, place a piece of cotton cloth over the bowl, and blow the smoke through the stem with the mouth. Instead of fumigation, a weak solution of tobacco may often be used quite as effectively; this is often the more convenient way for a few plants. Soak or steep some tobacco in water until the strength is extracted. The strength of the water may be determined by dipping a leaf into it or letting it remain in it for a short time—if the leaf is browned or burned, or turns so when taken out of the water, the solution is too strong, and must be reduced by increasing the quantity of water. When the right degree of strength is acquired, dip the whole plant into the water and afterwards syringe it off with clean water. What we desire to impress most forcibly on the minds of our readers, and especially those who keep only a small number of plants in the living room, is the better way, of watching them so closely and syringing and washing them so frequently that the fly is kept under and the plants maintained in the highest state of health.

SCALE INSECT.

The COCCUS, or SCALE INSECT, is a common pest on some kinds of plants—the Orange, the Myrtle, the Camellia, the Oleander, and many other hard-wooded plants are apt to be infested by them. There are many species of Coccus,

varying slightly from each other. One kind of plants is the home of one variety, and another sort devotes its attention exclusively to some other kind. The Grape, the Pear, the Elm, and almost every kind of our cultivated and forest trees has its special representative of this



COCCUS, OR SCALE INSECT.

class of insects. In the engraving the insect of natural size is shown, *a*; when magnified, the upper side, *b*, represents a shield, and the legs

are only seen when it is turned on its back, *c*. The remedy in this case is by washing the plant by hand and forcing the insect off with the thumb or finger-nail; or take a small, stiff brush and soap-suds, and brush the plant until it is thoroughly clean. The name of the species that infest the Myrtle, Orange, Oleander, &c., is *Coccus Hesperidum*.

A little alcohol, applied with a camel hair brush, such as is used in painting with water colors, will kill any insect it touches. Turpentine diluted in water in the proportion of one part of turpentine to sixteen parts of water will also destroy this insect and the Mealy Bug. The liquid should be applied with a syringe, and immediately thereafter the plant be syringed with clear water that it may not be injured by the turpentine, which is very destructive to vegetable life.

Watchfulness and constant cleanliness will prevent the necessity, for the amateur with a small collection, to resort to special methods to rid his plants of these insect enemies,—water, a brush, a sponge and a syringe are the efficient and simple weapons, if used vigilantly.

SPECIFIC INSTRUCTIONS.—We design to make everything very plain and give instructions that all can understand. Still we cannot always say why a plant became sickly and died, nor what course of treatment would have saved it, and particularly so unless we are pretty well informed as to its treatment; nor can we always say why seed did not germinate. The ladies, too, must remember that the very best recipes in the world do not always insure good cooking. Some failures at first must be expected, and a few always.

MR. VICK:—Your MAGAZINE for February received, and I never saw a nicer one. Am well pleased, and hope all succeeding ones will be as good.—S. R. C., *Garrettsville, Ohio*.

We design to make every succeeding number not only as good, but a good deal better. When we can't improve we shall think of stopping.

COMFREY FOR FEEDING.

MR. VICK:—Will you please inform me through your MAGAZINE what kind of a plant is the Prickly Comfrey (*Symphytum asperum*;) its nature, how to cultivate it, and where seed may be obtained?—J. L. S., *Lopez Island, Wash. Ter.*

About a year ago we wrote as follows of this plant, and have no reason to change our mind. Ever since we were born we have known a plant with pretty drooping blue flowers, called *Comfrey*, and the children, for short, called it *Comfort*. Botanists would have given it a different name, *Symphytum asperum*. It is found in most old gardens in England, having been introduced from the Caucasus nearly a hundred years ago. Some years since this plant was tried as a forage crop. Animals relished the plant when cut green, and it produced a great amount of fodder. So do *Vetches*, and a good many other plants in England. The amount of *green fodder* produced on an acre in England and Scotland, in a rich soil and moist climate, is, as an old farmer remarked to us, "something astonishing." The best growth we ever saw was a mixture of oats and vetches. However, the Comfrey has made little or no progress in England. Some American editors have recently had their attention attracted to this subject, and now there is a hue and cry all over the country about Comfrey, and hundreds of people are writing for seeds. The plant is propagated by divisions of the roots. This is a nine days wonder. BARNUM, and he knows a good deal about human nature, says the people like to be humbugged. There may be some good in this Comfrey, but we have never found a plant that we considered so valuable for a summer green crop in America as corn sown in drills. With good soil and fair culture between the rows, a very great amount of excellent food can be grown. When we saw such grand crops of Scarlet Clover growing in the South of England, and so freely used for horse and cattle feed, even being sold green in the city markets, by the bushel or basket, so that city horses and cows could get a bite of fresh Clover, we determined to recommend this plant for trial in America, but thought our dry, hot summers would not produce the wonderful crops that reward the English farmer. Our dependence is mainly, we think, on the corn and clover plants for summer feed, and for winter and spring use, Indian corn and roots. Our people are beginning to learn the value of mangels and carrots, and pretty soon they will think the parsnip a good thing. A reasonable desire for new and untried things is enterprise, seldom results in loss, and without it there can be little improvement; but when pushed to extremes becomes a mania.

AMATEUR GARDENERS.

FLOWERS AT IOWA STATE FAIR.—I was the successful competitor for your Premium on cut flowers at the Iowa State Fair. I was very proud of my display, and should have been willing to show them at any time or place. Many said it was the finest display of flowers by an amateur ever made at the Iowa State Fair. I presume a hundred different individuals took the names of the Dahlias and Asters. The Dahlias were as perfect as Dahlias could be. The Bird of Passage, Acme of Perfection, Galatea, Blushing Fifteen, Princess, Fancy Boy, White Aster, Burning Coal and Glory of Summer were the admiration of every one. My collection of Asters was beautiful, and often commented upon. But My Pansies were even more beautiful, and very large. My Dahlias were troubled with the Borer. I took out over two hundred, but they came out all right.—MRS. J. D., *Monticello, Iowa.*

ABOUT CAULIFLOWER.—My plants gave no appearance of heads, and having read of the efficacy of watering, at Erfurt, I made the experiment on part of my Dwarf Mammoth Carter's, keeping them quite moist, but not saturated, for about six weeks. The result, fine, solid heads, some of them ten inches across; the unwatered plants remaining a mass of coarse, loose leaves. My Lily of the Valley, will they ever bloom? They have increased from four to twelve, but never flower. In the Isle of Wight, and also in Devonshire, we used to plant them under the drip of trees, but that does not appear to answer here.—MRS. A. F. ASKEEL, *Scriba Center, N. Y.*

PANSIES.—We never had such flowers before; you ought to have seen our Pansies. We have every color you can think of, and lots of them that you cannot think of. We have one or two roots of them that have not had anything but double Pansies, and they were very beautiful. The Caladium was also very handsome. It was a great curiosity here. I will send you one of the double Pansies; some of them have been a great deal more double than this one. They do not seem to produce any seed.—J. T., *Butler Center, Iowa.*

SHELL FLOWER AND PHLOX.—My Shell plants were splendid; one sent up a stalk forty-four inches high, and covered with the large, beautiful shells, side stalks very long, perfect and numerous. Phlox Drummondii a bed of bloom, over twenty varieties—"admired of all admirers."—MRS. E. L., *Strongsville, O.*

LILIUM AURATUM.

Mr. VICK:—I observe in the MONTHLY that one of your correspondents had *Lilium Auratum* ten inches across the flower. About ten years ago you sent me several fine bulbs, and I have not been without that grand flower in my garden since; last summer I had twenty-five flowers, and more than half of them measured twelve inches across. They grew in a slightly shaded situation in soil brought from the woods.—MRS. H. H. J., *Zanesville, O.*

We are indebted to some friend for a photo-



graph of a very beautiful cluster of *Auratum* Lilies, from which we have made our engraving. It will be observed that one of the flowers has seven petals instead of six, the usual number.

THE MINISTRY OF FLOWERS.—A lady of Brownville, N. Y., writes, "A bouquet of flowers from my garden or plants helps brighten our church every Sabbath, and last Sunday one of white flowers, in a Parian marble vase as snowy as themselves, was the sweetest thing of beauty ever seen." This is well; may thousands do the same,—but don't forget to take them to the school-room, where the little ones can see and learn to love them. The school-room, you know, is not so neat and well furnished, nor so clean; nor are the seats so easy as those in the church, and the flowers will brighten up the gloomy place a little.

THE PHACELIA FOR BOUQUETS.—The Phacelia works up beautifully in bouquets. Everybody admired these flowers; many a time this summer have I cut a Pink and a cluster of those delicate flowers for button-hole bouquets, and every time they called forth pleasant remarks. If there is any thing prettier or better than Phacelia for bouquets, I should like to know it.—MRS. E. P. W., *Canandaigua, Mich.*

TREATMENT OF HOUSE PLANTS.

Last evening I received your beautiful MONTHLY MAGAZINE. It was indeed magnificent. I thought I would write and tell you of my wonderful success with flowers. Three years ago I was perfectly ignorant in regard to the culture of flowers, but commenced with a few, and have had wonderful success. I increased my varieties rapidly, and wish that to-day, the 14th of February, you could step into my sitting-room and see for yourself what a nice display I have. Geraniums, Fuchsias, Begonias, Hyacinths, Crocus, all in full bloom, and a handsome Calla, just flowering. I also have a fine variety of Ferns, among them the beautiful Sword Fern, the finest specimen I ever saw: it is three feet high. All they require is a humid atmosphere and plenty of warm water.

Please do advocate the *Abutilon Thompsonii* and also *Euonymus Japonicus aureus*. One of the latter, which I purchased one year ago, is now three feet high, and is a lovely plant. My flowers are up-stairs in three large windows, that extend to the floor, across each of which is a shelf supported by brackets. In the east window I have a window-garden, the design for which I obtained from your FLORAL GUIDE. Then I obtained an Ivy-trellis bracket, and trimmed my window-garden. So you can imagine I have a beautiful, as well as useful, ornament; have also a Fern-stand trimmed with the same. The Ivy-trellis may be used in many ornamental ways. My flowers get all the borrowed heat from the dining-room, as well as the steam and moisture, and to-day they are the wonder and admiration of my friends.

There is, I think, one law in regard to watering plants which many people entirely neglect, and thereby induce blight and render their plants unhealthy. In watering plants always use water that is slightly warmer than the soil they are growing in. Another important point is to keep them cleansed. I do not allow a particle of dust to collect on my plants, and they are in as nice and healthy condition now as in midsummer.

Last summer I bought some Hyacinth bulbs, although I had made several attempts previously, and they had all proved failures, but these last were a success, and the exquisite blossoms that have this winter rewarded our efforts, make the room redolent with their perfume. I am now thoroughly satisfied that the chief reason why people so often fail in the culture of bulbs in pots in winter is that they are too impatient to bring them out. I kept them in the dark fully eight weeks, and then when brought to the light they went gradually, steadily forward

to the very perfection of flowering. It is no use to try to hurry them, for they absolutely refuse to be hurried, and from ten to twelve weeks is about the usual time required to produce fine flowers—at least this is my experience.

I read in your MAGAZINE, of several failures in the culture of *Lilium auratum*. I purchased one two years since and planted it in a box, and that summer it had two beautiful flowers, and five the following summer. I never saw such flowers—some twelve inches across. In the fall the box was set in my wardrobe, and by the first of June the Lily was all in full bloom.

Last spring I purchased a dozen and a half of "Pearl" Tuberoses, and they all bloomed to perfection but one, and it no doubt would have done so had its situation been favorable.—Mrs. A. H., *Bantam, Ohio*.

FLOWERS IN KANSAS.

My *Erythrina* came up with two stalks, very much as you represent in your publication, and blossomed. In about two weeks afterwards it began to branch out, and grew about four feet high each branch, and there were twelve of them, and all blossomed finer than the first. The second time it blossomed was six weeks after the first. I must say a word about my Canna, for it was a marvel of beauty. It grew six feet high, had about sixty stalks, and was in blossom continually from June till hard frost. The bulb I had was, I thought, quite small—it would not more than half fill a teacup,—but the bunch of roots we dug up in the fall would fill a bushel basket. My Dahlias, six in all, were splendid. The Firefly was dazzling in the morning, when the dew was on. I will not attempt to tell how many blossoms it bore; it was just covered from June to the middle of October. My first ones came out in May. We have the advantage over our Northern friends, our seasons being so much longer. My home was in Eastern N. Y., but we never had as fine flowers there as here. I could not save any Aster seeds, as the fine ones did not mature. After I dug my roots I left them in an out-house for a day or two, and one of our North-westerners came up and froze a good many. I had over two buckets of Dahlias. I shall send in the spring for more. I had more fine flowers for the money from Dahlias than anything I had.—Mrs. S. W. B., *Cherry Vale, Kan.*

CUCUMBERS.—For a pickling Cucumber, I like the Long Green, because of its slender, pretty shape, when young, and nice color. For early and later table use I prefer the Russian and White Spine.—T. H., *Champaign, Ill.*

TO DESTROY INSECTS.

In response to your invitation to your subscribers to give their experience in gardening, and especially on the subject of destroying insects, I send you mine. I have found white hellebore (a powder to be obtained at the druggist's) to be infallible, destroying all manner of insects without injuring the plants in the least. It can be put in water and applied through a garden syringe, hose or watering-pot; or put in two or three thicknesses of gauze, the edges of which tie to a long stick, and shake the hellebore under and over the plants when they are wet. Care should be taken not to inhale it, or to get it on the hands, as it causes irritation of the skin. I can fully endorse all you say in praise of the *Phlox Drummondii*. I had two packets of the mixed varieties planted in a bed by themselves, but about a third of the bed was accidentally destroyed after the plants came up. I had the vacancy filled from other parts of the bed, and in July I had the most beautiful bed of flowers I ever saw in a private garden. There were thirty-four varieties in bloom at one time, and they excited the admiration of all who saw them. My ten-cent paper of blotched and striped *Petunias* covered more ground and bloomed more abundantly than any other kind of seeds to be obtained for a dozen times that amount. They were in bloom from early in July till late in October. My *Carnation* or striped *Balsams*, *Double Portulaca*, *Zinnias*, *Pansies*, *Morning Glories*, *Amaranthus bicolor rubra*, *Double Larkspur*, *Cockscombs*, *Dianthus*, &c., were all very beautiful. Flowers have been my one comfort in a terrible affliction, and with much difficulty I have penned this reward in their praise.—D. A. N., *Pawtucket, R. I.*

NOT TOO EARLY.—We at the North, after our five months winter and two months bad weather, are all so anxious to commence gardening, that we are apt to start many things too early. A certain amount of warmth is necessary to cause seed to germinate, and without this it will rot in the damp earth. A few hardy things, such as the *Early Peas*, *Spinach* and *Onions*, cannot be in the ground too soon. Our *Beans*, *Corn*, *Cucumbers*, and seeds of like character are lost if in too early.

HOW TO KILL WHITE WORMS.—I think I have found a good remedy for those little white worms, which so infest flower pots. Take common lime, dissolve it, and pour it on the earth. It killed the worms in mine, and made my plants grow beautifully.—MRS. E. L. P., *Feddo, N. Y.*

WHITE CANDYTUFT.

Please tell your readers that the *White Candytuft* is almost or quite hardy, even far north, and will give an abundance of small white flowers, which are so very useful for almost all floral work. I get flowers until very hard frost and snow, and then again early in the spring. I sow a little bed every once in a while, certainly every spring and autumn, as a



kind of reserve or store, and thus have two or three beds going at once, and am without flowers but a very

few weeks in the year. In the fall I fill a pot or box with some young plants from the garden and keep it in a pretty cool place, and the little white clusters of flowers soon reward me largely for a little trouble. There is a coarse growing kind, but I like the small kind with small, flat trusses best. It gives more flowers and the heads are neater.—F. C., *Schenectady, N. Y.*

PETUNIA DEATH TO THE POTATO BUG.—More than a dozen of our friends have written us that *Petunia* plants, any of our ordinary cultivated kinds, will drive away or kill the *Potato Bugs*, as they knew by actual test. While it hardly seems natural, there must be some truth in the matter. WILLIAM GAVIN, of *Prince Arthur's Landing, Ont.*, writes, "We have no potato bugs in this locality, owing, I believe, to a wild sort of *Petunia* which grows in uncultivated places. It is believed that this plant is very poisonous to the bugs, they being very fond of it. I think the *Petunia* belongs to the same natural order as the *Potato*, but you may think over this matter and if you think best, give it a place in your *MAGAZINE*."

DRYING PLANTS.—Most people have had to regret that specimens of plants and flowers which they find in the woods and fields, and carry home to preserve, in most cases lose their color and beauty in the process. A *Vienna journal* says: "We are informed that this inconvenience may be overcome by dipping the plants in a warm mixture of one part hydrochloric acid and six hundred parts alcohol, shaking them to get rid of superfluous fluid, and then laying them in warm blotting-paper, which ought to be changed at least once daily. By this means the plants will not only dry quickly, but will also retain their natural color."

ORNAMENTAL GOURDS.

Those curious vegetable productions, the Gourds, furnished my friends and myself much pleasure and real amusement last summer. Perhaps they could not be called either delicate or beautiful, but no one can look upon a collection, or even two or three varieties without



being greatly interested. You know they are of all curious forms, from the slender snake to the beautiful and parti-colored pear. Would it not be a good thing to give us a chapter on these curious plants? One thing in their favor they furnish a rapid and elegant shade, that others besides Jonah have appreciated.—MRS. M. J., *Long Island, N. Y.*

[A chapter on the Gourds shall be given before long.]

JAPAN COCKSCOMB IN THE SHADE.—My Japan Cockscumb which grew in the shade produced such ugly plants that I pulled them up, and was glad to be rid of them; while two that I gave to a neighbor who had no shade in her yard grew to be the most brilliant plants, one branching and having eight large heads or combs, while the stalk was flat and of a bright red color. I shall try again this summer. What plants will do best in a bed that only receives the sun for an hour or two in the morning?—MRS. M. L. R., *Vincennes, Ind.*

[In our next we will give a list of plants and seed that will flourish in the shade.]

CLIMBERS.—Will you please give us a chapter about *Climbers*, the leading kinds, that can be depended upon for covering a porch or arbor permanently, and that do not need sowing or planting every year; also those annual climbers that can be sown, and that will grow quickly to fill up any vacant space.—CONVERSE.

[Soon we will meet the wishes of our correspondent, but we like to treat such subjects pretty thoroughly, and have quite enough long articles in this number.]

VICK'S FLORAL PREMIUMS.

FOR AMATEURS ONLY.

To encourage the culture of Flowers among the people, and particularly among the people who love them and grow them for love alone, I offer \$40.00 in Cash for the **Best Show of Flowers** at each and every State Fair in America.

Officers will please announce this Offer in their Premium Lists, and, if possible, still earlier in the Newspapers, so that all may have an opportunity to prepare for the competition.

I authorize the officers of every State and Territorial Agricultural Society in the United States (and where there are two prominent Societies in one State, both,) and the Provinces of Canada, to offer, in my behalf, the following premiums:



For Best Collection of Cut Flowers, . .	\$20 00
Second Best " " " "	10 00
Third Best " " " "	5 00
Fourth Best " " " "	Floral Chromo.

The offer is made to amateurs only, and the flowers to be exhibited at the usual Annual Fairs. The awards to be made by the regular Judges, or by any committee appointed for the purpose. When only one collection is exhibited, the Judges may award the first or any other premium, according to merit, but the exhibition must be a creditable one, and if not so, in the opinion of the Judges, no premium to be awarded. The flowers not to be made up in bouquets, but exhibited separate and named, the object being to award the premiums to the flowers, and not for tasteful arrangement. Also,

For the Best Ornamental Floral Work,
(either Bouquet or Floral Ornament,) . . . \$5 00

I shall not consider the offer accepted by any Society, unless published in the regular Premium List, so that all may have an opportunity to compete. The Officers of Societies will please see that **DISINTERESTED** and **COMPETENT JUDGES** are appointed.

We also authorize the Officers of **EVERY COUNTY SOCIETY** in America to offer one of our **FLORAL CHROMOS** for best exhibition of Cut Flowers.

 We make no conditions regarding where seed is purchased, as many have supposed, but must insist that committees award the prizes fairly to **Amateurs**, and **not to professional Gardeners**, or **Gardeners at Gentlemen's Establishments.** 

Officers of Agricultural Societies who accept this offer and give it publicity in the papers and their Premium Lists, will please notify us, and we will publish the fact in our columns. Those from whom we hear nothing we shall consider as having declined to take advantage of our Premiums.



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PERENNIAL PHLOX